

636727

**Report Number: 214-TRC-03-004**

**Safety Compliance Testing For FMVSS 214**

**Side Impact Protection**

**Indicant**

**Mazda Motor Corporation**

**2003 Mazda 6 4-door**

**NHTSA Number: C35403**

**Transportation Research Center Inc.**

**10820 State Route 347**

**P. O. Box B-67**

**East Liberty, OH 43319**



**Test Date: March 17, 2003**

**Final Report: March 28, 2003**

**U. S. Department Of Transportation  
National Highway Traffic Safety Administration  
Enforcement**

**Office of Vehicle Safety Compliance**

**400 Seventh Street, S. W.**

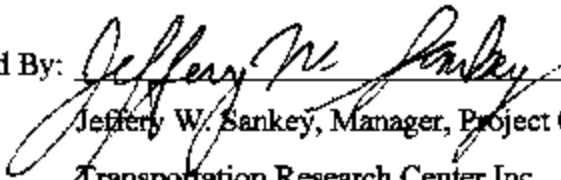
**Room No. 6111 (NVS-220)**

**Washington, DC 20590**

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16. Abstract <p>This 55/28 km/h 90° Impact (Moving Deformable Barrier) Compliance Test was conducted on the subject vehicle, a 2003 Mazda 6 4-door in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-214D-06 (except the test was conducted 8 km/h (5 mph) faster than the standard specifics) to determine FMVSS 214 Side Impact Protection compliance. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on March 17, 2003.</p> <p>The impact velocity of the Moving Deformable Barrier (MDB) was 62.1 km/h, and the ambient temperature at the struck (driver's side) side of the target vehicle at the time of impact was 21° C. The target vehicle's post-test maximum crush was 304 mm at Level 2.</p> <p>The test or target vehicle's performance is given below:</p> <table border="1"> <thead> <tr> <th></th> <th>Front SID-H3</th> <th></th> <th>Rear SID-H3</th> <th></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td>62.2</td> <td>g's</td> <td>52.4</td> <td>g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td>72.5</td> <td>g's</td> <td>59.1</td> <td>g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td>86.4</td> <td>g's</td> <td>80.2</td> <td>g's</td> </tr> <tr> <td>Thoracic Trauma Index, (TTI):</td> <td>79.5</td> <td>g's</td> <td>69.6</td> <td>g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td>81.5</td> <td>g's</td> <td>91.0</td> <td>g's</td> </tr> </tbody> </table> <p>The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during side impact event.</p>				Front SID-H3		Rear SID-H3		Left Upper Rib Acceleration:	62.2	g's	52.4	g's	Left Lower Rib Acceleration:	72.5	g's	59.1	g's	Lower Spine Acceleration:	86.4	g's	80.2	g's	Thoracic Trauma Index, (TTI):	79.5	g's	69.6	g's	Pelvis Acceleration (PEV):	81.5	g's	91.0	g's
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## Section 1

### Purpose and Test Procedure

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-02-D-11114. The purpose of this test was to evaluate side impact protection in a 2003 Mazda 6 4-door. The test was conducted in accordance with the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 2001) (except the test was conducted 8 km/h (5 mph) faster than the standard specifies).

## Section 2

### Summary of Side Impact Test

A 2003 Mazda 6 4-door was impacted on the driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 62.1 km/h (38.6 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, Ohio on March 17, 2003. Pre-test and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact Hybrid III dummies (SID-H3s) are included in Appendix A.

Two restrained Side Impact Hybrid III Dummies (SID-H3s) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OVSC Side Impact Laboratory Test Procedure (TP-214D-06, dated July 2001). Both SID-H3s were certified prior to this test. The side impact test was documented by one real-time camera and 9 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID-H3s were instrumented with the following accelerometers:

1. Head (HED) triaxial and redundant accelerometers (X, Y, and Z-directions)
2. Neck (NEK) triaxial force and moment load cells (X, Y, and Z-directions)
3. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
4. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
5. Lower Thoracic Spine (T<sub>12</sub>) uniaxial and redundant accelerometer (Y-direction)
6. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)

A summary of the side impact Hybrid III dummy (SID-H3) configuration and verification test data can be found in Appendix C. A total of 73 channels of data were recorded. Appendix B contains the vehicle, MDB, and dummy response data traces.

The following tables summarize the results of the test:

Injury Criteria	Front SID-H3	Rear SID-H3
TTI (g)	79.5	69.6
PEV (g)	81.5	91.0

#### Head Injury Criteria (HIC)

Injury Criteria	Front SID-H3	Rear SID-H3
HIC	559	555
$t_1$ (ms)	49.5	45.7
$t_2$ (ms)	85.5	62.2
Average Acceleration $t_1 - t_2$ (g)	47.4	64.6

HIC is as defined in FMVSS 208. The maximum time interval  $t_1$  to  $t_2$  is 36 ms.

#### Neck Injury Criteria

Maximum Values	Front SID-H3	Rear SID-H3
Neck X-axis Force (N)	-940.3	533.8
Neck Y-axis Force (N)	1042.1	-1159.2
Neck Z-axis Force (N)	2398.5	-1788.6
Moment About X-axis (Nm) <sup>1</sup>	87.0	-106.2
Moment About Y-axis (Nm)	31.7	-17.1
Moment About Z-axis (Nm)	23.5	-24.3

<sup>1</sup> Calculated about the occipital condyle with the following formula:  $M_{occ} = M_x + 0.01778F_y$ .

### Data Acquisition Explanations

The left rear passenger's head X-axis redundant acceleration data channel, HEDXR4, lost data after 97 milliseconds. This affected the redundant resultant acceleration, velocity and head Injury Criteria (HIC) calculations.

The left mid A-post Y-axis acceleration data channel, LUAYG1, lost data after 19 milliseconds. This affected the velocity calculation.

The left front door on centerline Y-axis acceleration data channel, LFCYG1, lost data after 36 milliseconds. This affected the velocity and displacement calculations.

The left front door mid rear Y-axis acceleration data channel, LFMYG1, recorded questionable data after 3 milliseconds. This affected the velocity and displacement calculations.

Section 3

Summary of Test Results

Data Sheet 1

General Test Vehicle Parameter Data

Test Vehicle Information:

Vehicle Year/Make/Model: 2003 Mazda 6  
Vehicle Body Style/Color: 4-door/Green VIN: 1YVFP80C835M23683  
Vehicle NHTSA No.: C35403 Build Date: 02/03  
Engine Data: 4 Cylinders;      CID; 2.3 Liters;      cc  
Placement:      Longitudinal; or X Lateral; or      Horizontal  
Transmission: 5 Speed; X Manual;      Automatic;      Overdrive  
Final Drive:      RWD; X FWD;      Four-Wheel Drive  
Odometer Reading: 68 km  
Options: X A/C; X Power steering; X Pwr. brakes; X Power windows

Data From Vehicle's Tire Placard:

Tire Pressure (at capacity)\* 220 kPa Front; 220 kPa Rear  
Recommended Tire Size: P205/60R16  
Tires on Test Vehicle: P205/60R16 Manufacturer: Michelin, Energy MXV4 Plus

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear;      3rd seat; 5 Total  
Type of Front Seats: X Bucket;      Bench;      Split bench  
Type of Front Seat Back:      Fixed; X Adjustable with X Lever or      Knob  
Vehicle Max. Capacity Loading = 385 kg (A)  
No. of Occupants x 68.04 kg. = 340 kg (B)  
Vehicle Cargo Capacity (A-B) = 45 kg

Test Vehicle Delivered Weight With Maximum Fluids:

Left Front	=	<u>402.0</u> kg	Left Rear	=	<u>295.5</u> kg
Right Front	=	<u>412.0</u> kg	Right Rear	=	<u>274.5</u> kg
Total Front	=	<u>814.0</u> kg	Total Rear	=	<u>570.0</u> kg
Front % of Total Weight	=	<u>58.8</u> %	Rear % of Total Weight	=	<u>41.2</u> %
Total Weight	=	<u>1384.0</u> kg			

\* Tire pressure used in test.

Data Sheet 1 (continued)

General Test Vehicle Parameter Data

Calculation Of Vehicle's Target Test Weight:

Total Test Vehicle Delivered Weight With Max. Fluids = 1384.0 kg (A)  
Maximum Cargo Carrying Capacity of Test Vehicle = 45.0 kg (B)  
Weight of Instrumented Side Impact Dummies (2 X 83.0 kg) = 166 kg (C)  
Test Vehicle Target Weight: = 1595 kg (A+B+C)

Fully Loaded Test Vehicle (UDW + 2 SIDs + Cargo):

Left Front	=	<u>450.5</u> kg	Left Rear	=	<u>354.0</u> kg
Right Front	=	<u>441.5</u> kg	Right Rear	=	<u>349.5</u> kg
Total Front	=	<u>892.0</u> kg	Total Rear	=	<u>703.5</u> kg
Front % of Total Weight	=	<u>55.9</u> %	Rear % of Total Weight	=	<u>44.1</u> %
Total Weight	=	<u>1595.5</u> kg			

As Tested Weight of Test Vehicle (2 SIDs + Cargo + Equipment & Instrumentation):

Left Front	=	<u>460.8</u> kg	Left Rear	=	<u>361.8</u> kg
Right Front	=	<u>420.6</u> kg	Right Rear	=	<u>344.2</u> kg
Total Front	=	<u>881.4</u> kg	Total Rear	=	<u>706.0</u> kg
Front % of Total Weight	=	<u>55.5</u> %	Rear % of Total Weight	=	<u>44.5</u> %
Total Weight	=	<u>1587.4</u> kg			

Test Vehicle Attitude (all dimensions in millimeters):

As Delivered	Fully Loaded	Ready For Test
Right Front <u>715</u>	Right Front <u>703</u>	Right Front <u>694</u>
Left Front <u>716</u>	Left Front <u>697</u>	Left Front <u>700</u>
Right Rear <u>720</u>	Right Rear <u>692</u>	Right Rear <u>693</u>
Left Rear <u>720</u>	Left Rear <u>686</u>	Left Rear <u>697</u>

Test Vehicle Wheelbase: 2670 mm

C.G. = 1187 mm rearward of front wheel centerline

Total Vehicle Length:

Right Side = 4365 mm  
Left Side = 4365 mm  
Centerline = 4768 mm

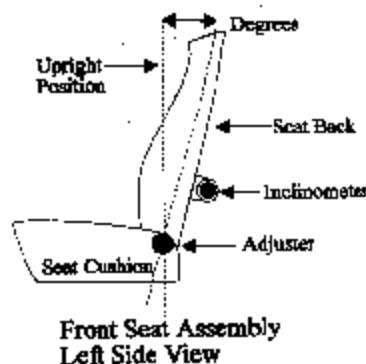
Data Sheet 1 (continued)

General Test Vehicle Parameter Data

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



Front Seat Cushion Placement: Mid. 12<sup>th</sup> notch rearward from forwardmost

Total Length of Fore/Aft Adjustment Travel: 240 mm

Total Number of Adjustment Positions or Detents: 25

Front Seat Back Adjustment Position: The back was adjusted to 13.3° at head restraint

Seat Back Torso Angle: 13.3 degrees

Second Position Seat Placement: Fixed

Total Length Of Fore/Aft Adjustment Travel: N/A mm

Seat Back Adjustment Position: Fixed

Adjustable Steering Column Position: 67.3°, mid between highest and lowest angles

Window Positions:

Right Front: Closed

Right Rear: Open

Left Front: Closed

Left Rear: Open

Note: Windows will be in closed position on struck side of test vehicle and in open position on opposite side.

Amount of Stoddard Solvent In Fuel Tank:

68.0 liters (fuel tank usable capacity)

63.2 liters used in test (92% - 94% of fuel tank usable capacity)

Location of Impact Point On Test Vehicle Side To Be Impacted:

Wheelbase = 2670 millimeters

Intended impact point is 395 millimeters rearward of front axle centerline  
(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 940 millimeters rearward of front axle centerline



## Data Sheet 2

### Test Vehicle Summary of Results

Vehicle Year/Make/Model: 2003/Mazda/6

Body Style: 4-door

VIN: 1YVFP80C835M23683

NHTSA No.: C35403

Build Date: 02/03

Test Date: 03/17/03

Vehicle Overall Length = 4768 mm

Overall Width = 1780 mm

#### Vehicle Test Weight (Pre-Test):

Left Front = 460.8 kg      Left Rear = 361.8 kg

Right Front = 420.6 kg      Right Rear = 344.2 kg

Total Front = 881.4 kg      Total Rear = 706.0 kg

Total Weight = 1587.4 kg

Wheelbase = 2670 mm

Longitudinal C.G. From Center Of Front Axle = 1187 mm

Impact Angle With Respect To Impactor = 90 degrees

#### Impact Point:

Actual Impact Point is 0 mm from nominal impact ref. line (Lateral)

Actual Impact Point is 8 mm up from nominal impact point (Vertical)

#### Maximum Exterior Static Crush:

1. Level 1 ( 280 mm above ground) = 132 mm

2. Level 2 ( 505 mm above ground) = 304 mm

3. Level 3 ( 635 mm above ground) = 292 mm

4. Level 4 ( 880 mm above ground) = 284 mm

5. Level 5 ( 1360 mm above ground) = 53 mm

Maximum Post-Test Intrusion = 304 mm

#### Occupants:

##### Front Passenger

##### Rear Passenger

Dummy Identification 028

065

Restraints Used Seat belt

Seat belt

#### Instrumentation:

Number of Vehicle Data Channels: = 26

Number of Cameras: Onboard = 3      Offboard = 7      Total = 10

Data Sheet 3

Moving Deformable Barrier(MDB) Summary

MDB Face Manufacturer And Serial Number:

Plascore, 050C0602-035A0602

Position Of Impactor (MDB) On Monorail:

Crabbed 27°

MDB Specifications:

Overall Width of Framework Carriage	=	<u>1251</u>	mm
Overall Length of MDB (Incl. honeycomb impact face)	=	<u>4014</u>	mm
Wheelbase of Framework Carriage	=	<u>2591</u>	mm
Track of Framework Carriage (Front & Rear)	=	<u>1881</u>	mm
C.G. Location Rearward of Front Axle	=	<u>1113</u>	mm

MDB Weight:

Left Front	=	<u>379.6</u>	kg	Left Rear	=	<u>302.0</u>	kg
Right Front	=	<u>397.0</u>	kg	Right Rear	=	<u>283.0</u>	kg
Total Front	=	<u>776.6</u>	kg	Total Rear	=	<u>585.0</u>	kg
Total MDB Weight	=	<u>1361.6</u>	kg				
Impact Angle (MDB C/L to Target Vehicle C/L) = <u>90</u> degrees							
Impact Speed = <u>62.1</u> km/h							

Maximum Static Crush of Honeycomb Impact Face:

1. Row A at Center of Bumper Level	=	<u>190.1</u>	millimeters
2. Row B at Top of Bumper Level	=	<u>73.0</u>	millimeters
3. Row C at Mid Level	=	<u>91.9</u>	millimeters
4. Row D at Top of Stack Level	=	<u>121.5</u>	millimeters

Instrumentation:

Number of MDB Data Channels = 5

Data Sheet 4

Post-Test Observations

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

Visible Dummy Contact Points:

	<u>Left Front SID-H3</u>	<u>Left Rear SID-H3</u>
Head:	<u>Window, upper door</u>	<u>Header</u>
Upper Torso:	<u>Door panel</u>	<u>Door panel</u>
Lower Torso:	<u>None</u>	<u>None</u>
Left Knee:	<u>Door panel</u>	<u>Door panel</u>
Right Knee:	<u>None</u>	<u>None</u>

Door Opening:

	<u>Left Side</u>	<u>Right Side</u>
Front:	<u>Jammed shut</u>	<u>Remained latched, opened easily</u>
Rear:	<u>Jammed shut</u>	<u>Remained latched, opened easily</u>

MDB Distance From Target Impact Point:

Vertical: 8 mm up from target

Horizontal: 0 mm from target

Arm Rest Locations:

Front: 255 mm below the bottom of the window

Rear: 300 mm below the bottom of the window

Seat Movement:

Front: None

Rear: None

Glazing Damage:

Windshield: Small crack at upper A-pillar.

Window: Driver side, passenger side and rear window broken out.

Pillar Separation: No

Sill Separation: No

Other Notable Impact Effects:

None; vehicle trunk stayed latched during test. The trunk was opened during rollover test preparations and would not re-latch prior to testing (photo A-55, Appendix A).

Section 4

Occupant and Vehicle Information

# Data Sheet 5

## SID-H3 Instrumentation Data

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

TEST NUMBER: 030317-2

DRIVER DUMMY SERIAL NUMBER: 028

POSITIVE  
DIRECTION

NEGATIVE  
DIRECTION

### HEAD ACCELERATION

LONGITUDINAL	8.2 g	@ 192.3 ms	39.3 g	@ 78.3 ms
LATERAL	66.8 g	@ 78.4 ms	7.8 g	@ 35.8 ms
VERTICAL	56.6 g	@ 53.4 ms	0.3 g	@ 246.2 ms
RESULTANT	77.6 g	@ 78.4 ms		
HIC	559 from 49.5 to 85.5 ms			

### HEAD REDUNDANT ACCELERATION

LONGITUDINAL	8.5 g	@ 193.4 ms	39.2 g	@ 78.3 ms
LATERAL	66.8 g	@ 78.4 ms	7.7 g	@ 35.8 ms
VERTICAL	59.3 g	@ 53.4 ms	0.4 g	@ 246.7 ms
RESULTANT	77.5 g	@ 78.4 ms		
HIC	605 from 49.3 to 85.3 ms			

### NECK FORCE

X-AXIS SHEAR	58.7 N	@ 309.8 ms	940.3 N	@ 80.4 ms
Y-AXIS SHEAR	1042.1 N	@ 80.8 ms	317.1 N	@ 35.8 ms
Z-AXIS AXIAL	2398.5 N	@ 57.6 ms	83.9 N	@ 0.9 ms

### NECK MOMENT

ABOUT X-AXIS	72.4 N-m	@ 76.4 ms	84.7 N-m	@ 46.3 ms
ABOUT Y-AXIS	31.7 N-m	@ 89.0 ms	22.9 N-m	@ 66.4 ms
ABOUT Z-AXIS	23.5 N-m	@ 77.0 ms	20.3 N-m	@ 213.3 ms
OCCIPITAL CONDYLE (X)	87.0 N-m	@ 76.4 ms	77.5 N-m	@ 45.7 ms

### LEFT UPPER RIB ACCELERATION

LATERAL (P)	62.2 g	@ 31.3 ms	26.6 g	@ 70.6 ms
LATERAL (R)	63.5 g	@ 31.3 ms	29.2 g	@ 70.6 ms

### LEFT LOWER RIB ACCELERATION

LATERAL (P)	72.5 g	@ 31.3 ms	18.6 g	@ 70.0 ms
LATERAL (R)	73.7 g	@ 31.3 ms	20.1 g	@ 70.0 ms
TTI d (P)	79.5			
TTI d (R)	80.5			

### LOWER SPINE ACCELERATION

LATERAL (P)	86.4 g	@ 35.0 ms	15.4 g	@ 88.8 ms
LATERAL (R)	87.3 g	@ 35.0 ms	16.2 g	@ 65.6 ms

### PELVIS ACCELERATION

LATERAL (P)	81.5 g	@ 30.6 ms	14.2 g	@ 55.6 ms
LATERAL (R)	81.8 g	@ 30.6 ms	14.3 g	@ 55.6 ms

### POSITIVE DIRECTION

LONGITUDINAL: FORWARD  
LATERAL: RIGHTWARD  
VERTICAL: DOWNWARD

### NEGATIVE DIRECTION

LONGITUDINAL: REARWARD  
LATERAL: LEFTWARD  
VERTICAL: UPWARD

# Data Sheet 5 (Continued)

## SID-H3 Instrumentation Data

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

TEST NUMBER: 030317-2

PASSENGER DUMMY SERIAL NUMBER: 065

POSITIVE  
DIRECTION

NEGATIVE  
DIRECTION

### HEAD ACCELERATION

LONGITUDINAL	7.7 g	@ 66.1 ms	25.2 g	@ 51.1 ms
LATERAL	94.7 g	@ 50.2 ms	15.3 g	@ 66.1 ms
VERTICAL	32.5 g	@ 50.4 ms	44.0 g	@ 59.1 ms
RESULTANT	102.2 g	@ 50.2 ms		
HIC	555 from 45.7 to 62.2 ms			

### HEAD REDUNDANT ACCELERATION

LONGITUDINAL <sup>1</sup>	---	---	---	---
LATERAL	96.3 g	@ 50.2 ms	15.4 g	@ 66.6 ms
VERTICAL	33.2 g	@ 50.4 ms	43.5 g	@ 59.4 ms
RESULTANT <sup>1</sup>	---	---		
HIC <sup>1</sup>	--- from --- to --- ms			

### NECK FORCE

X-AXIS SHEAR	533.8 N	@ 61.1 ms	119.7 N	@ 78.1 ms
Y-AXIS SHEAR	134.9 N	@ 92.2 ms	1159.2 N	@ 60.5 ms
Z-AXIS AXIAL	653.3 N	@ 50.2 ms	1788.6 N	@ 61.0 ms

### NECK MOMENT

ABOUT X-AXIS	12.8 N-m	@ 133.0 ms	100.8 N-m	@ 52.2 ms
ABOUT Y-AXIS	9.5 N-m	@ 96.4 ms	17.1 N-m	@ 64.4 ms
ABOUT Z-AXIS	7.2 N-m	@ 102.7 ms	24.3 N-m	@ 65.0 ms
OCCIPITAL CONDYLE (X)	14.5 N-m	@ 127.1 ms	106.2 N-m	@ 53.1 ms

### LEFT UPPER RIB ACCELERATION

LATERAL (P)	52.4 g	@ 43.8 ms	7.2 g	@ 152.5 ms
LATERAL (R)	51.3 g	@ 43.8 ms	7.0 g	@ 152.5 ms

### LEFT LOWER RIB ACCELERATION

LATERAL (P)	59.1 g	@ 48.8 ms	6.3 g	@ 150.0 ms
LATERAL (R)	60.0 g	@ 48.8 ms	6.2 g	@ 150.0 ms
TTI d (P)	69.6			
TTI d (R)	69.2			

### LOWER SPINE ACCELERATION

LATERAL (P)	80.2 g	@ 48.8 ms	24.0 g	@ 70.6 ms
LATERAL (R)	78.4 g	@ 48.1 ms	23.8 g	@ 70.6 ms

### PELVIS ACCELERATION

LATERAL (P)	91.0 g	@ 41.9 ms	8.0 g	@ 79.4 ms
LATERAL (R)	91.0 g	@ 41.9 ms	7.9 g	@ 79.4 ms

### POSITIVE DIRECTION

LONGITUDINAL: FORWARD  
LATERAL: RIGHTWARD  
VERTICAL: DOWNWARD

### NEGATIVE DIRECTION

LONGITUDINAL: REARWARD  
LATERAL: LEFTWARD  
VERTICAL: UPWARD

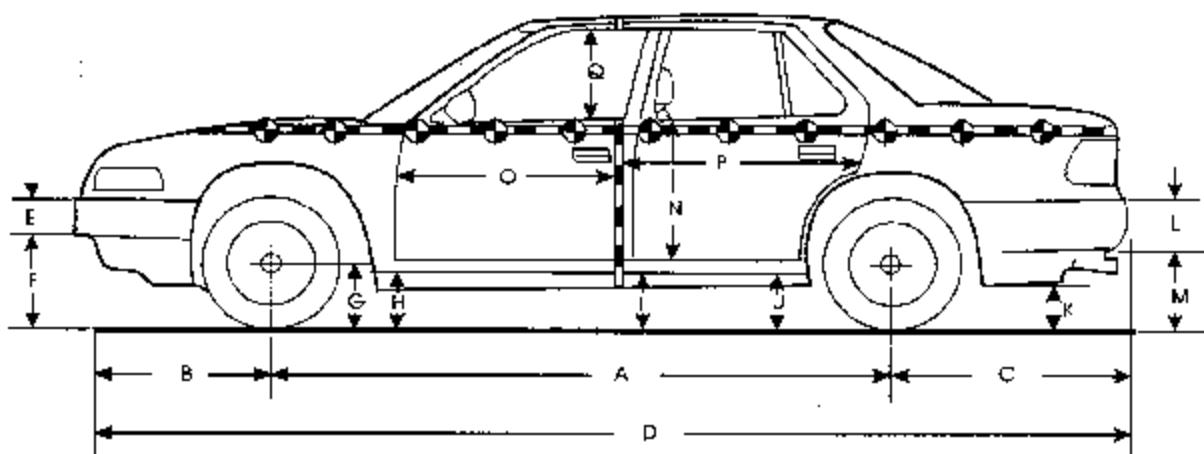
<sup>1</sup> See DATA ACQUISITION EXPLANATION

## Data Sheet 6

### Vehicle Pre-Test And Post-Test Measurements

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403



Left Side View

Note: All dimensions are in millimeters with tolerance of  $\pm 3$  mm

	Pre-Test (as delivered)	Pre-Test (as tested)	Post-Test (as tested)	Change
A	2670	2670	2650	20
B	990	990	990	0
C	1050	1050	1050	0
D	4768	4768	4749	19
E	150	150	150	0
F	425	---	---	---
G	310	308	310	-2
H	240	220	250	-30
I	240	205	293	-88
J1	200	160	202	-42
J2	240	203	260	-57
K	270	---	---	---
L	190	190	190	0
M	443	---	---	---
N	708	708	622	86
O	1124	1124	1070	54
P	1025	1025	939	86
Q	400	400	370	30
R	4365	4365	4365	0
S	4365	4365	4295	70
T	1782	1782	1491	291

D = Length at centerline  
T = Width at B-pillar

E&L = Bumper Thickness  
J1 = To Pinch Weld

R = Right Side Length  
J2 = To Sill

S = Left Side Length

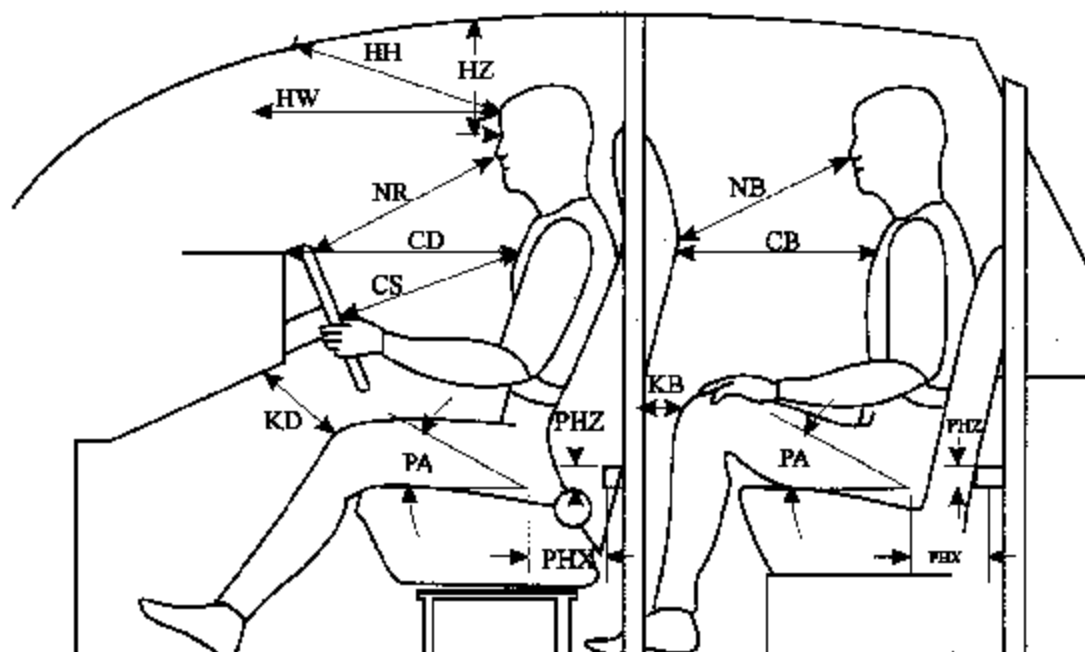
<sup>1</sup> Fasoia removed to meet test weight.

# Data Sheet 7

## SID-H3 Longitudinal Clearance Dimensions

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403



Left Side View

Note: All measurements are in millimeters with tolerance of  $\pm 3$  mm

Measurement	Driver SID-H3 # 28	Left Rear Pass. SID-113 # 65
HH	401	N/A
HW	680	N/A
HZ	186	149
NR/NB	450	646
CD/CB	522	542
CS	342	N/A
KDL(KDA°)/KBL(KBA°)	123/(24.9°)	124/(23°)
KDR(KDA°)/KBR(KBA°)	104/(31.9°)	126/(27°)
PA°	23.4°	23.6°
PHX	162	309
PHZ	112	85

Note: 2-door vehicle shown. Rear dummy PHX and PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

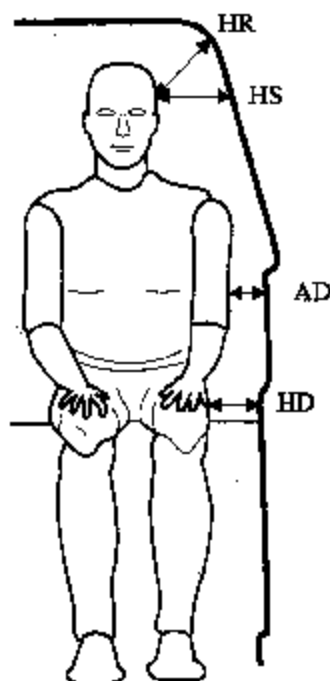


## Data Sheet 8

### SID-H3 Lateral Clearance Dimensions

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403



Note: All measurements are in millimeters with tolerance of  $\pm 3$  mm

Measurement	Driver SID-H3 # 28		Left Rear Pass. SID-H3 # 65	
HR	233		196	
HS	322		215	
AD*	Lower: 73	Upper: 98	Lower: 138	Upper: 123
HD	144		189	

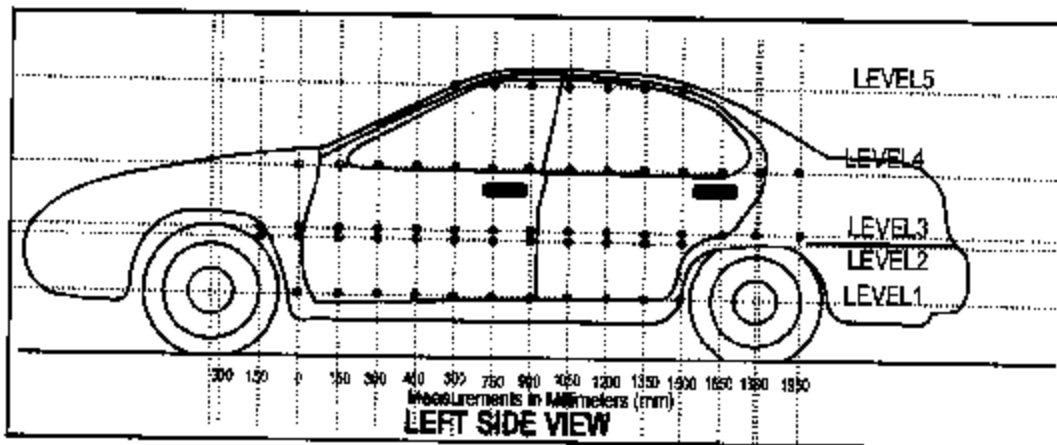
- \* Lower measurement is taken laterally at center of the lower rib accelerometer height from the SID arm segment to the closest part of the vehicle side.  
Upper measurement is taken laterally at center of the upper rib accelerometer height from the SID arm segment to the closest part of the vehicle side.

Data Sheet 9

Vehicle Side Measurements

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403



Level 5 - Window Top

Level 4 - Window Sill

Level 3 - Mid-Door

Level 2 - Occupant H-Point

Level 1 - Axle Centerline Height or Sill Top Height

Measurements Are Taken When The Vehicle Is In The "As Tested" Configuration.

Measurements along the vertical 750 mm line shown above:

Level 5 @ Window Top	=	<u>1360</u>	mm
Level 4 @ Window Sill	=	<u>880</u>	mm
Level 3 @ Mid Door	=	<u>635</u>	mm
Level 2 @ Occupant H-Point	=	<u>505</u>	mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>280</u>	mm

Data Sheet 10

Vehicle Exterior Crush Profiles - All Levels

NHTSA No.: C35403

Vehicle: 2003 Mazda 6 4-door

Location	Height	(mm) From Impact Point													
		-1200	-1050	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750
Level 1 Side Sill	Pre	690	---	---	---	---	---	---	---	643	669	665	661	660	657
	Post	685	---	---	---	---	---	---	---	655	714	726	740	764	785
	Crush	-5	---	---	---	---	---	---	---	12	45	61	79	104	128
Level 2 H-Point	Pre	---	---	680	639	---	---	---	---	633	640	639	639	639	638
	Post	---	---	675	625	---	---	---	---	665	804	851	875	892	910
	Crush	---	---	-5	-14	---	---	---	---	32	164	212	236	253	272
Level 3 Mid-Door	Pre	---	---	690	657	---	---	---	625	639	638	637	635	635	634
	Post	---	---	685	642	---	---	---	640	665	800	856	888	891	881
	Crush	---	---	-5	-15	---	---	---	15	26	162	219	253	256	247
Level 4 Window Sill	Pre	---	---	---	---	---	743	730	722	710	698	690	685	680	675
	Post	---	---	---	---	---	752	743	736	735	765	814	852	878	881
	Crush	---	---	---	---	---	9	13	14	25	67	124	167	198	206
Level 5 Window Top	Pre	---	---	---	---	---	---	---	---	---	---	---	---	---	963
	Post	---	---	---	---	---	---	---	---	---	---	---	---	---	975
	Crush	---	---	---	---	---	---	---	---	---	---	---	---	---	12

Data Sheet 10 (Continued)

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

Location	Height	(mm) From Impact Point														
		900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700		
Level 1 Side Sill	Pre	656	655	653	651	651	652	655	---	---	---	---	---	672		
	Post	784	785	785	777	750	725	700	---	---	---	---	---	656		
	Crush	128	130	132	126	99	73	45	---	---	---	---	---	-16		
Level 2 H-Point	Pre	637	637	630	631	632	633	635	628	---	---	---	---	660		
	Post	921	931	934	924	910	890	845	709	---	---	---	---	646		
	Crush	284	294	304	293	278	257	210	81	---	---	---	---	-14		
Level 3 Mid-Door	Pre	634	633	625	624	625	627	630	625	---	---	---	626	675		
	Post	881	886	917	895	900	915	909	772	---	---	---	620	667		
	Crush	247	253	292	271	275	288	279	147	---	---	---	-6	-8		
Level 4 Window Sill	Pre	670	665	650	649	647	646	647	640	642	657	664	674	690		
	Post	886	876	861	895	914	930	864	761	684	682	679	679	690		
	Crush	216	211	211	246	267	284	217	121	42	25	15	5	0		
Level 5 Window Top	Pre	947	942	923	924	920	918	918	930	---	---	---	---	---		
	Post	966	970	975	971	973	970	951	969	---	---	---	---	---		
	Crush	19	28	52	47	53	52	33	39	---	---	---	---	---		

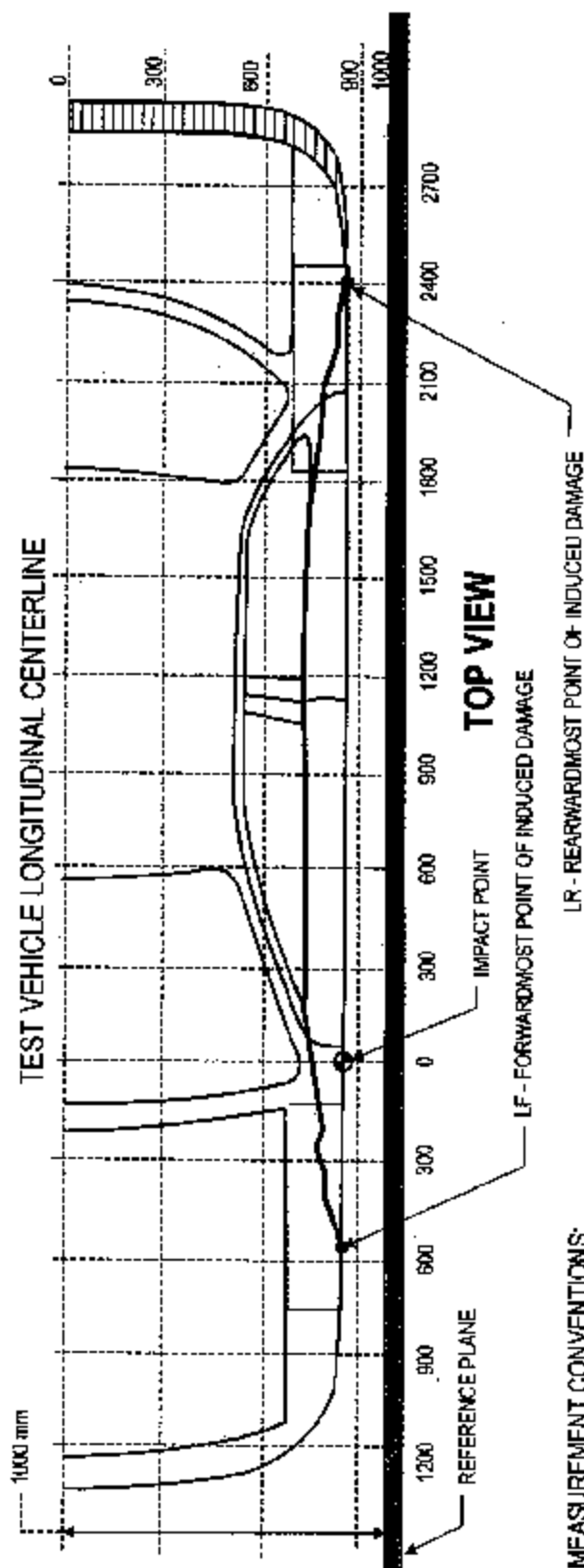
# Data Sheet 11

## Vehicle Damage Profile Distances

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

NOTE: All measurements are in millimeters (mm) and should be accurate to plus or minus 3mm.



### MEASUREMENT CONVENTIONS:

Forward of the impact point (towards front of vehicle) is considered negative (-)

Rearward of the impact point (towards rear end of vehicle) is considered positive (+)

DPD Measurements	Post-Test (mm)	Pre-Test (mm)	Static Crush (mm)
6: LF = 0 mm (Level 4)	735	710	25
5: 450 mm (Level 4)	852	685	167
4: 900 mm (Level 4)	886	670	216
3: 1350 mm (Level 4)	895	649	246
2: 1800 mm (Level 4)	864	647	217
1: LR = 2250 mm (Level 4)	684	642	42

Full length of induced damage was 0 to 2250 mm.

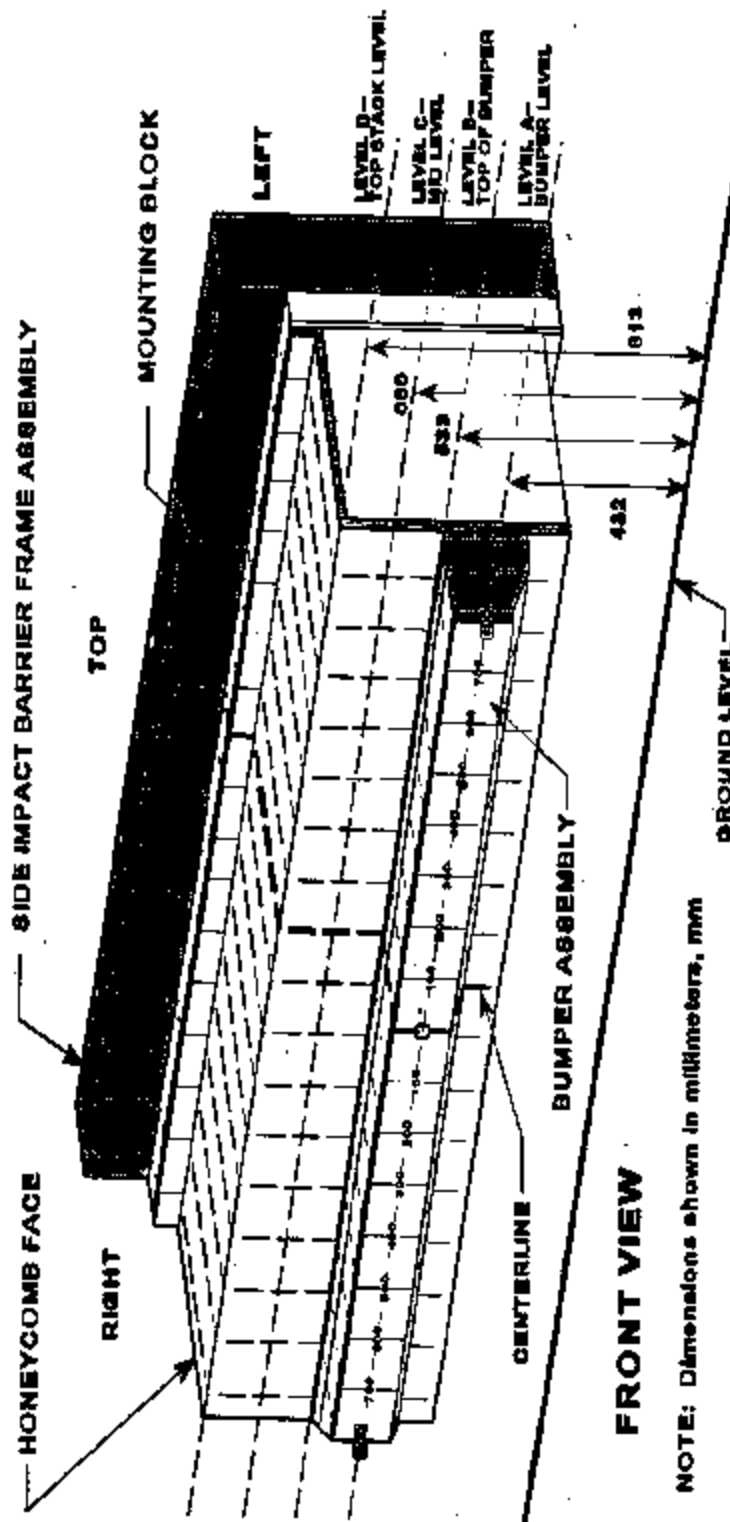
# Data Sheet 12

## Exterior Static Crush For Impactor Face

(Grid as looking at MDB from front)

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403



## **FRONT VIEW**

NOTE: Dimensions shown in millimeters, mm

# Data Sheet 12 (Continued)

## Exterior Static Crush For Impactor Face

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

Location	Height At CL	Distance Right of Center (mm)								Distance Left of Center (mm)								
		800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Top Stack Level																		
- Level D	813	-58.0	4.8	2.0	-5.1	-15.9	-40.2	-75.2	-64.5	-44.2	-28.0	-16.7	-15.9	-15.6	-19.2	-45.2	-79.3	-121.5
Mid Level																		
Level C	686	-23.5	-11.2	-4.7	-8.2	-10.4	-20.8	-51.9	-33.5	-18.8	-12.2	-9.9	-8.2	-11.3	-15.1	-20.6	-41.1	-91.9
Top Bumper																		
Level - Level B	533	-60.1	-52.5	-47.8	-39.4	-38.7	-33.6	-38.5	-40.7	-41.5	-37.5	-34.7	-34.3	-35.6	-37.9	-44.2	-55.4	-73.0
Mid Bumper																		
Level - Level A	432	-190.1	-170.1	-152.5	-141.1	-133.0	-131.9	-128.3	-126.6	-125.3	-122.8	-122.1	-121.8	-121.8	-123.8	-131.8	-145.3	-162.9

All measurements are in millimeters and have a tolerance of  $\pm 3$ mm.

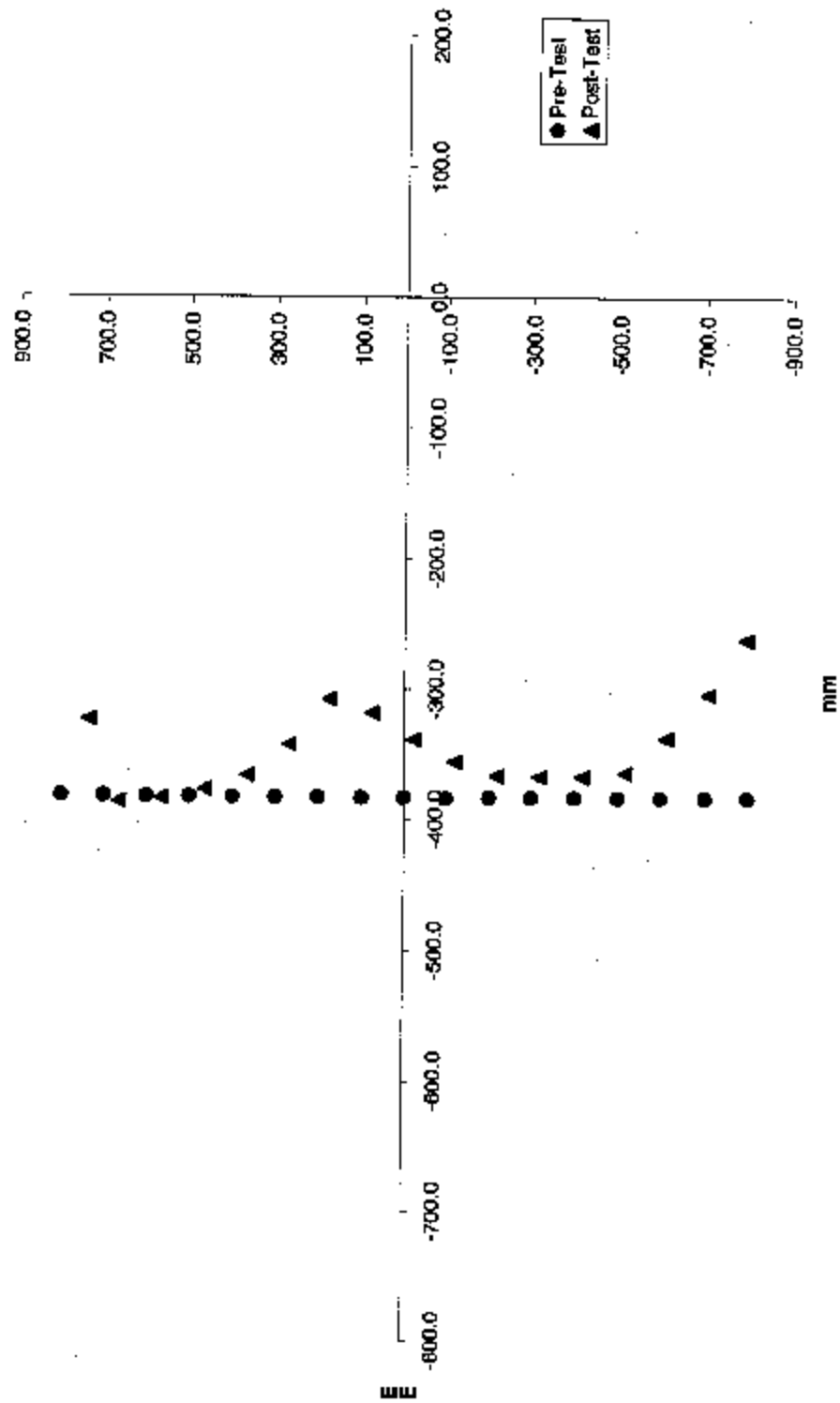
# Data Sheet 12 (Continued)

## Exterior Static Crush For Impactor Face

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

### **Level D - Deformable Barrier Face Profile 1-17**





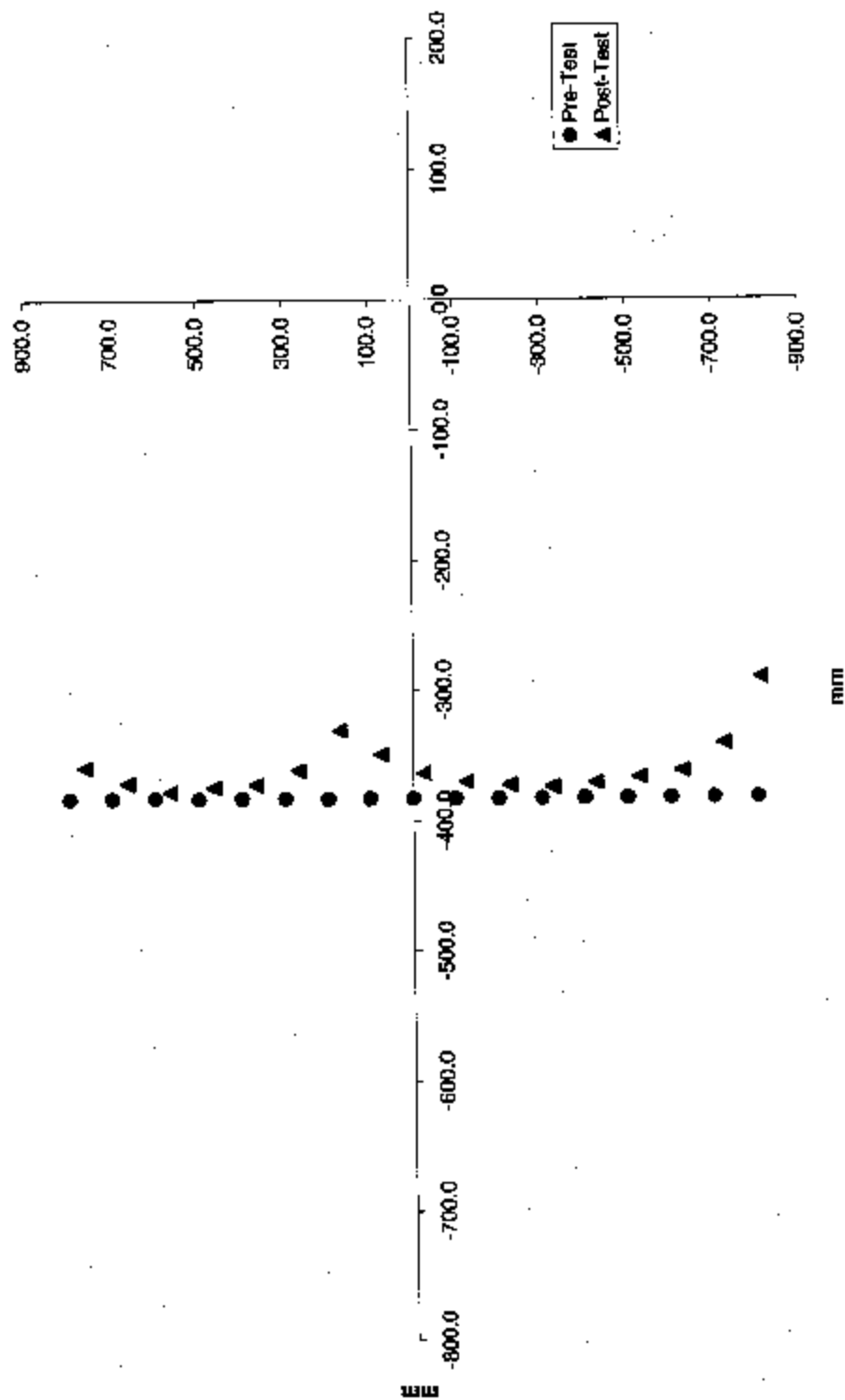
# Data Sheet 12 (Continued)

## Exterior Static Crush For Impactor Face

NHTSA No.: C35403

Vehicle: 2003 Mazda 6 4-door

### Level C - Deformable Barrier Face Profile 1B-34



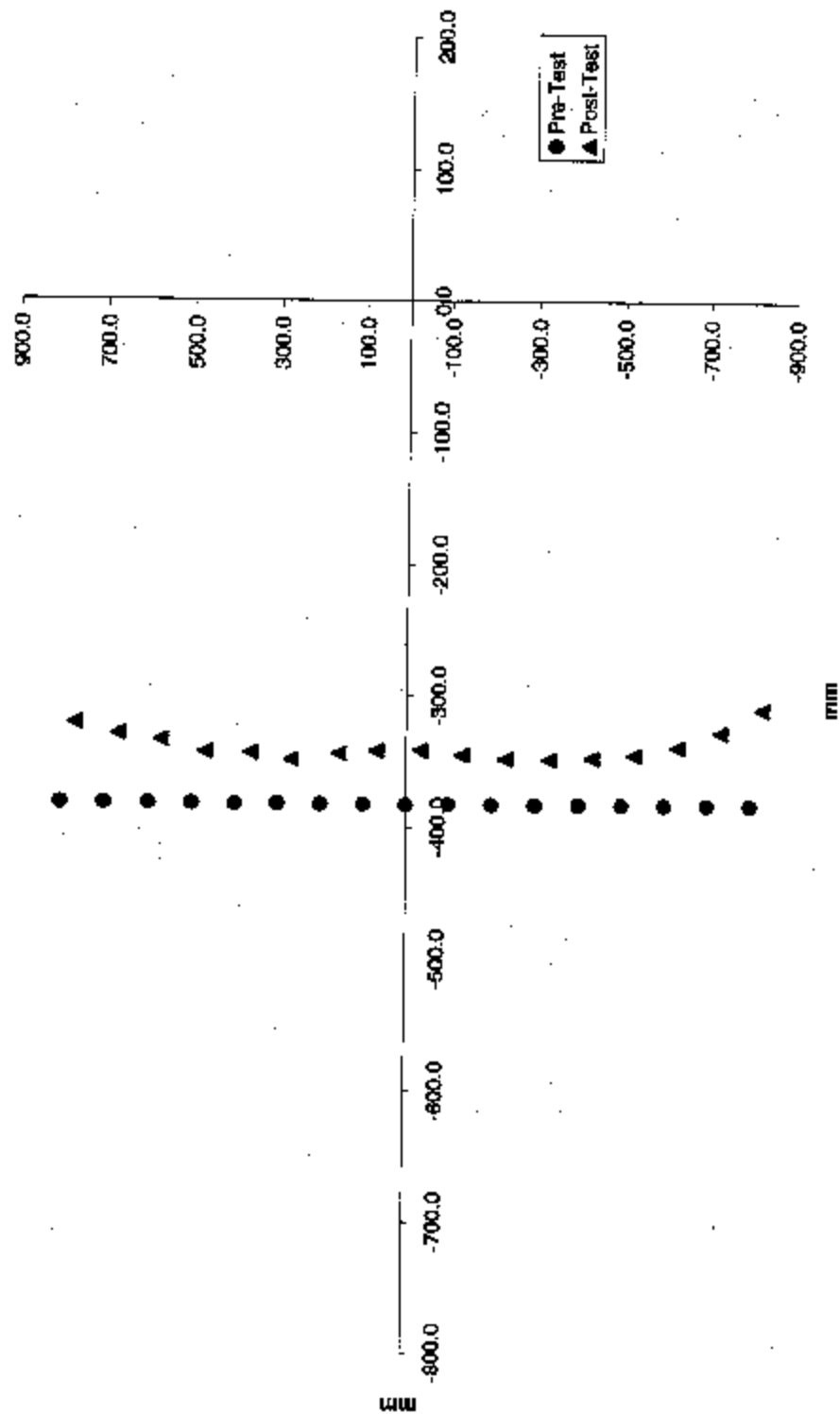
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

**Level B - Deformable Barrier Face Profile 35-51**



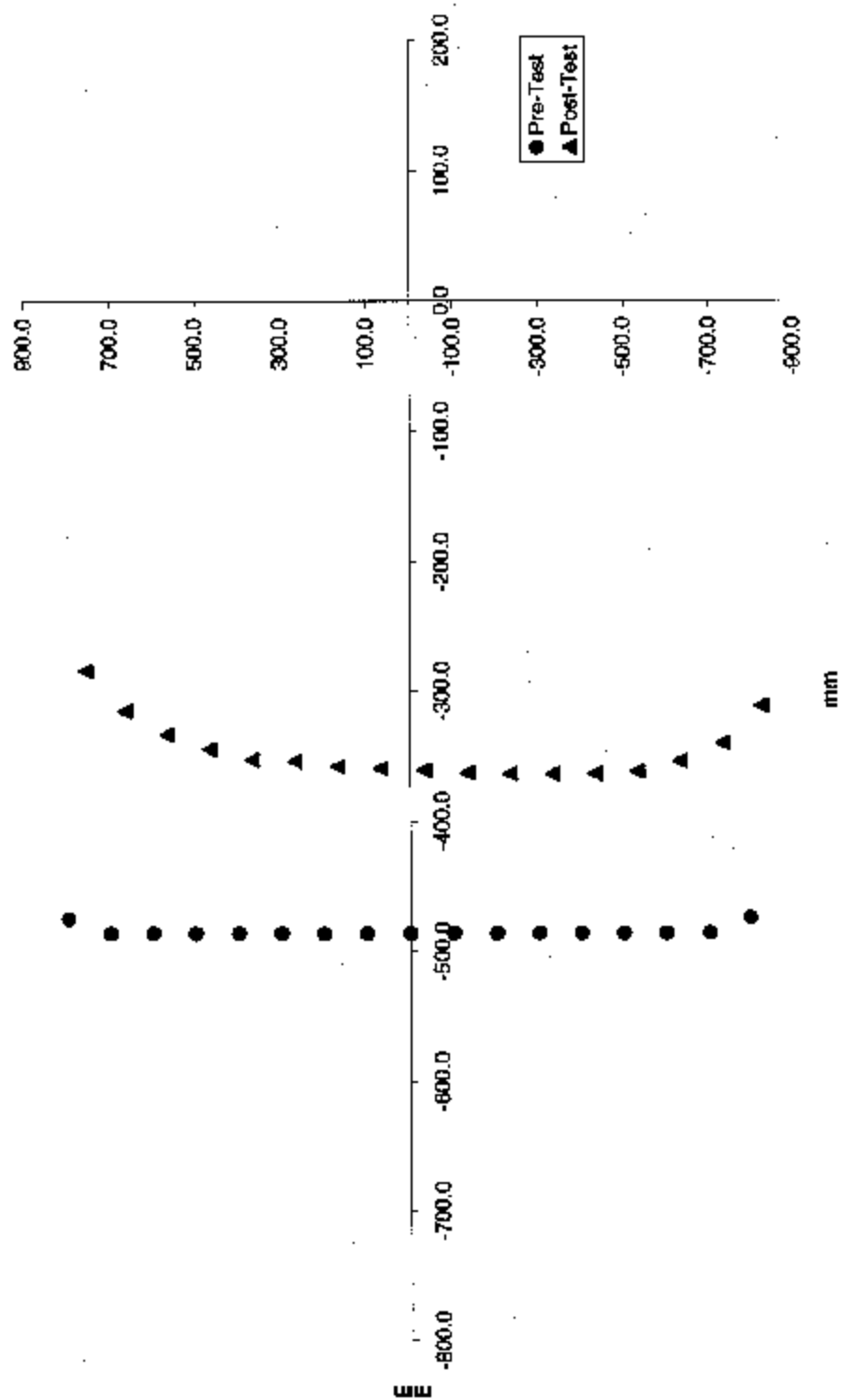
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

Level A - Deformable Barrier Face Profile 52-68



# Data Sheet 12 (Continued)

## Exterior Static Crush For Impactor Face

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

## Deformable Barrier Face Profile

### Level D - Top Stack

Index	Pre-Test		
	Xmm	Ymm	Zmm
1	-382	800	-43
2	-382	700	-43
3	-382	600	-43
4	-382	499	-44
5	-382	399	-44
6	-382	299	-44
7	-382	199	-44
8	-383	99	-45
9	-383	-1	-45
10	-383	-101	-45
11	-383	-201	-46
12	-383	-300	-46
13	-383	-401	-47
14	-383	-501	-47
15	-383	-601	-48
16	-383	-701	-48
17	-383	-801	-48

Index	Post-Test		
	Xmm	Ymm	Zmm
1	-324	735	-94
2	-387	663	-90
3	-384	564	-93
4	-377	464	-95
5	-366	364	-99
6	-342	267	-103
7	-307	175	-108
8	-318	75	-108
9	-338	-22	-102
10	-355	-120	-94
11	-366	-219	-87
12	-367	-319	-82
13	-367	-419	-78
14	-364	-517	-71
15	-337	-613	-69
16	-303	-708	-67
17	-261	-797	-69

Index	Difference		
	Xmm	Ymm	Zmm
1	-58	64	51
2	5	36	47
3	2	36	49
4	-5	36	52
5	-16	35	55
6	-40	32	59
7	-75	25	64
8	-65	24	63
9	-44	21	57
10	-28	19	49
11	-17	18	41
12	-16	18	36
13	-16	18	31
14	-19	16	24
15	-45	12	21
16	-79	6	19
17	-122	-4	21

# Data Sheet 12 (Continued)

## Exterior Static Crush For Impactor Face

Vehicle: 2003 Mazda 6 4-door

NIJ/SA No.: C35403

## Deformable Barrier Face Profile Cont'd.

### Level C - Mid Level

#### Pre-Test

Index	Xmm	Ymm	Zmm
18	-382	799	-171
19	-382	700	-172
20	-382	600	-171
21	-382	499	-172
22	-382	400	-173
23	-382	300	-173
24	-382	200	-173
25	-382	100	-174
26	-383	-1	-174
27	-383	-100	-173
28	-383	-201	-174
29	-383	-301	-174
30	-383	-401	-175
31	-383	-501	-175
32	-383	-601	-175
33	-383	-700	-176
34	-383	-801	-176

#### Post-Test

Index	Xmm	Ymm	Zmm
18	-358	763	-214
19	-370	666	-217
20	-377	567	-221
21	-374	466	-223
22	-372	367	-226
23	-361	268	-228
24	-330	173	-233
25	-349	74	-228
26	-364	-25	-223
27	-370	-125	-218
28	-373	-225	-214
29	-374	-326	-208
30	-371	-426	-203
31	-368	-526	-198
32	-362	-625	-192
33	-342	-723	-188
34	-291	-807	-192

#### Difference

Index	Xmm	Ymm	Zmm
18	-23	36	43
19	-11	34	46
20	-5	33	49
21	-8	33	51
22	-10	33	53
23	-21	32	55
24	-52	27	60
25	-34	26	54
26	-19	25	49
27	-12	25	44
28	-10	25	39
29	-8	25	34
30	-11	25	29
31	-15	25	23
32	-21	25	17
33	-41	22	12
34	-92	6	15

# Data Sheet 12 (Continued)

## Exterior Static Crush For Impactor Face

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

### Level B - Top of Bumper

#### Pre-Test

Index	Xmm	Ymm	Zmm
35	-382	801	-296
36	-382	702	-297
37	-382	601	-297
38	-382	500	-297
39	-382	400	-297
40	-382	301	-298
41	-382	201	-298
42	-382	100	-299
43	-383	0	-299
44	-383	-100	-300
45	-382	-200	-300
46	-382	-300	-300
47	-382	-400	-301
48	-383	-500	-301
49	-383	-600	-301
50	-382	-700	-301
51	-383	-800	-302

#### Post-Test

Index	Xmm	Ymm	Zmm
35	-322	768	-309
36	-329	670	-322
37	-334	571	-328
38	-343	470	-334
39	-344	366	-338
40	-349	269	-342
41	-344	158	-346
42	-342	70	-346
43	-341	-32	-342
44	-345	-132	-338
45	-348	-232	-332
46	-348	-331	-327
47	-347	-431	-322
48	-345	-531	-318
49	-338	-632	-313
50	-327	-731	-305
51	-310	-828	-299

#### Difference

Index	Xmm	Ymm	Zmm
35	-60	33	13
36	-52	31	25
37	-48	30	31
38	-39	30	37
39	-39	34	41
40	-34	32	44
41	-38	43	48
42	-41	30	46
43	-41	32	43
44	-37	32	38
45	-35	31	32
46	-34	31	26
47	-36	31	21
48	-38	31	17
49	-44	31	11
50	-55	31	4
51	-73	28	-3

# Data Sheet 12 (Continued)

## Exterior Static Crush For Impactor Face

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

## Deformable Barrier Face Profile Cont'd.

### Level A - Mid Bumper

#### Pre-Test

Index	Xmm	Ymm	Zmm
52	-474	797	-423
53	-485	699	-424
54	-485	599	-425
55	-485	499	-426
56	-485	398	-427
57	-485	298	-427
58	-485	198	-428
59	-486	98	-429
60	-486	-2	-430
61	-486	-101	-430
62	-486	-201	-431
63	-486	-301	-431
64	-486	-402	-432
65	-486	-501	-433
66	-486	-601	-433
67	-486	-701	-434
68	-474	-799	-434

#### Post-Test

Index	Xmm	Ymm	Zmm
52	-284	756	-429
53	-315	664	-451
54	-332	566	-461
55	-344	467	-467
56	-352	367	-471
57	-353	266	-470
58	-357	167	-471
59	-359	67	-472
60	-361	-33	-472
61	-363	-133	-472
62	-364	-233	-472
63	-364	-333	-471
64	-364	-433	-471
65	-362	-533	-469
66	-354	-633	-465
67	-340	-731	-457
68	-312	-826	-444

#### Difference

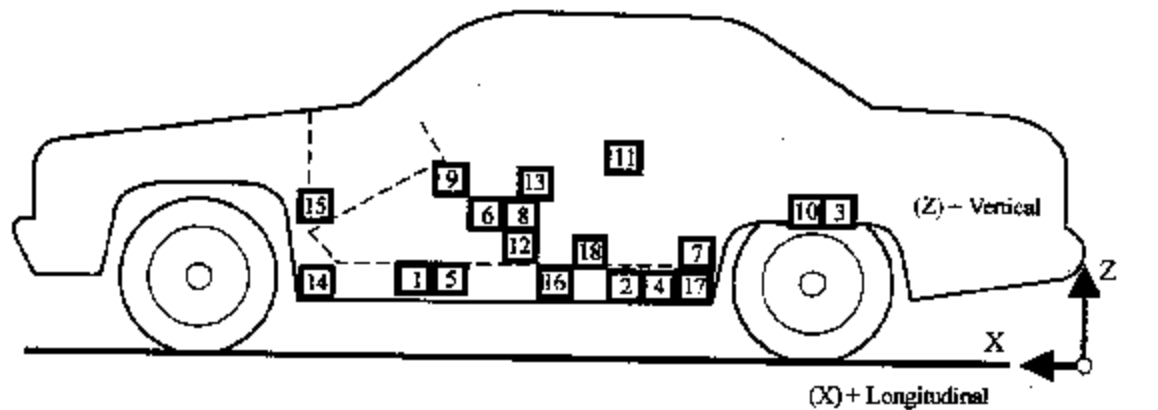
Index	Xmm	Ymm	Zmm
52	-190	41	6
53	-170	35	26
54	-153	33	36
55	-141	32	41
56	-133	32	44
57	-132	32	43
58	-128	32	43
59	-127	31	43
60	-125	31	42
61	-123	32	42
62	-122	32	41
63	-122	32	40
64	-122	31	39
65	-124	32	37
66	-132	31	32
67	-145	30	23
68	-163	27	9

# Data Sheet 13

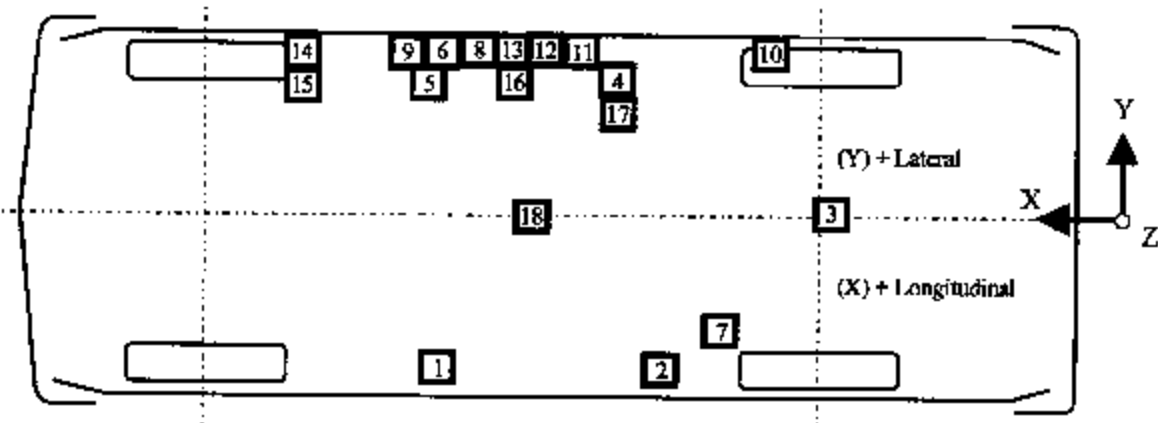
## Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403



Side View



Bottom View

- |                                    |  |
|------------------------------------|--|
| 1-Right Front Side Sill            | 10-Left Rear Door Mid Rear               |
| 2-Right Side Sill at Rear Seat     | 11-Left Rear Door Upper Centerline       |
| 3-Rear Floorpan above Axle         | 12-Left Side Lower B-pillar              |
| 4-Left Side Sill at Rear Seat      | 13-Left Side Middle B-pillar             |
| 5-Left Front Side Sill             | 14-Left Side Lower A-pillar              |
| 6-Left Front Door on Centerline    | 15-Left Side Middle A-pillar             |
| 7-Right Rear Occupant Compartment  | 16-Left Side Front Seat Track at H-point |
| 8-Left Front Door Mid Rear         | 17-Left Rear Seat Track at H-point       |
| 9-Left Front Door Upper Centerline | 18-Vehicle Center of Gravity             |



# Data Sheet 13 (Continued)

## Test Vehicle Accelerometer Locations and Data Summary

NHISA No.: C35403

Vehicle: 2003 Mazda 6 4-door

TEST NUMBER: 030317-2

No. LOCATION

POSITIVE DIRECTION  
NEGATIVE DIRECTION

X Y Z

1 RIGHT SIDE SILL AT FRONT SEAT LONGITUDINAL LATERAL VERTICAL RESULTANT	3155 mm 682 mm -278 mm	3.7 g 21.1 g 3.3 g 22.3 g	@ 63.0 ms @ 6.6 ms @ 29.0 ms @ 6.8 ms	6.8 g 2.8 g 7.2 g	@ 10.6 ms @ 124.7 ms @ 21.3 ms
2 RIGHT SIDE SILL AT REAR SEAT LONGITUDINAL LATERAL VERTICAL RESULTANT	2002 mm 680 mm -273 mm	4.6 g 30.9 g 5.3 g 31.2 g	@ 62.3 ms @ 6.5 ms @ 52.6 ms @ 6.6 ms	7.0 g 2.5 g 8.7 g	@ 11.3 ms @ 122.7 ms @ 16.6 ms
3 REAR FLOORPAN ABOVE AXLE LONGITUDINAL LATERAL VERTICAL RESULTANT	1055 mm 0 mm -525 mm	4.6 g 23.6 g 12.3 g 24.3 g	@ 59.7 ms @ 6.7 ms @ 10.0 ms @ 6.6 ms	6.6 g 2.1 g 17.6 g	@ 15.4 ms @ 96.0 ms @ 12.9 ms
4 LEFT SIDE SILL AT REAR SEAT LATERAL	1995 mm -680 mm -275 mm	93.5 g	@ 7.0 ms	31.5 g	@ 15.0 ms
5 LEFT SIDE SILL AT FRONT SEAT LATERAL	3142 mm -685 mm -277 mm	50.0 g	@ 5.4 ms	4.8 g	@ 12.2 ms

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

TEST NUMBER: 030317-2

No. LOCATION

X

Y

Z

POSITIVE  
DIRECTION

NEGATIVE  
DIRECTION

6 LEFT FRONT DOOR ON CENTERLINE LATERAL	2781 mm	-775 mm	-419 mm	---	---	---
7 RIGHT REAR OCCUPANT COMPARTMENT LATERAL	1872 mm	352 mm	-270 mm	---	---	---
8 LEFT FRONT DOOR MIDREAR LATERAL	2463 mm	-780 mm	-410 mm	30.4 g @ 6.2 ms	2.4 g @ 122.9 ms	---
9 LEFT FRONT DOOR UPPER CENTERLINE LATERAL	2665 mm	-781 mm	-847 mm	161.2 g @ 18.6 ms	132.8 g @ 29.0 ms	---
10 LEFT REAR DOOR MIDREAR LATERAL	1480 mm	-758 mm	-648 mm	100.0 g @ 16.8 ms	43.5 g @ 9.8 ms	---
11 LEFT REAR DOOR UPPER CENTERLINE LATERAL	1670 mm	-731 mm	-925 mm	98.8 g @ 18.7 ms	96.5 g @ 33.0 ms	---
12 LEFT LOWER B-POST LATERAL	2255 mm	-746 mm	-532 mm	222.6 g @ 4.6 ms	42.6 g @ 11.1 ms	---

# Data Sheet 13 (Continued)

## Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: Q35403

TEST NUMBER: 030317-2

No. LOCATION

X

Y

Z

POSITIVE  
DIRECTION

NEGATIVE  
DIRECTION

13 LEFT MIDDLE B-POST LATERAL	2227 mm	-722 mm	-662 mm	202.5 g @ 4.6 ms	18.7 g @ 13.6 ms
14 LEFT LOWER A-POST LATERAL	3225 mm	-740 mm	-404 mm	120.4 g @ 2.8 ms	24.9 g @ 12.2 ms
15 LEFT MIDDLE A-POST LATERAL	3235 mm	-730 mm	-620 mm	---	---
16 LEFT FRONT SEAT TRACK LATERAL	2520 mm	-603 mm	-274 mm	226.1 g @ 36.1 ms	96.5 g @ 29.7 ms
17 LEFT REAR SEAT TRACK LATERAL	1799 mm	-644 mm	-339 mm	172.6 g @ 6.9 ms	74.7 g @ 10.2 ms
18 VEHICLE CENTER OF GRAVITY	2557 mm	0 mm	-385 mm		
LONGITUDINAL				1.8 g @ 14.8 ms	10.4 g @ 8.4 ms
LATERAL				23.7 g @ 6.9 ms	2.3 g @ 123.8 ms
VERTICAL				8.1 g @ 15.1 ms	6.4 g @ 9.3 ms
RESULTANT				25.1 g @ 7.3 ms	

REFERENCE: X: + FORWARD FROM REAR BUMPER

Y: + RIGHTWARD FROM VEHICLE CENTERLINE

Z: + DOWNWARD FROM GROUND LEVEL

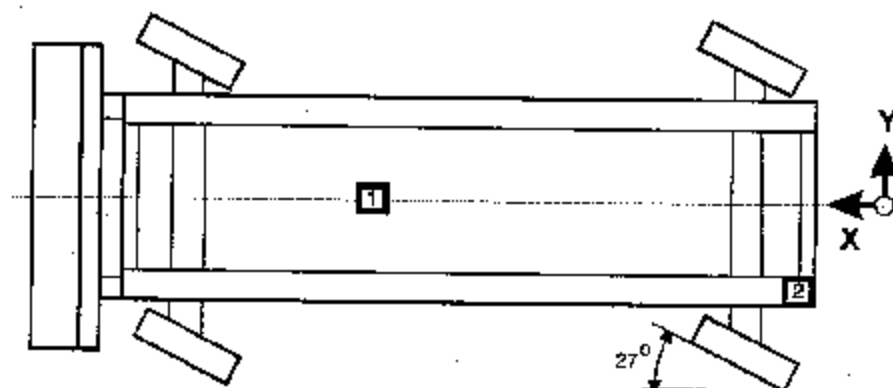
For acceleration data sign convention, see Report Sign Convention in Appendix D.  
1 See DATA ACQUISITION EXPLANATIONS

# Data Sheet 14

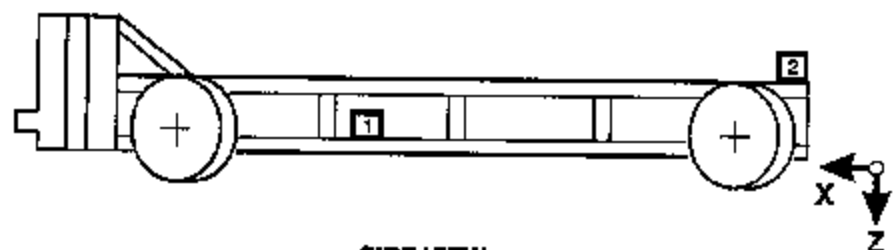
## MDB Accelerometer Locations and Data Summary

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403



TOP VIEW



SIDE VIEW

Accel. No.	Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
		X*	Y*	Z*	Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	MDB Center of Gravity	1853	0	-519				
	Longitudinal X				3.1	117.4	20.8	35.3
	Lateral Y				5.0	60.7	8.0	47.3
	Vertical Z				5.4	58.6	5.8	22.8
	Resultant R				21.8	35.1	---	---
2	Rear Frame Member	411	-738	-628				
	Longitudinal X				2.3	118.0	22.4	32.6
	Lateral Y				2.9	29.7	1.8	152.2

\*Reference: X = Rear Bumper (- Forward)

Y = Vehicle Centerline (+ To Right)

Z = Ground Level (+ Down)

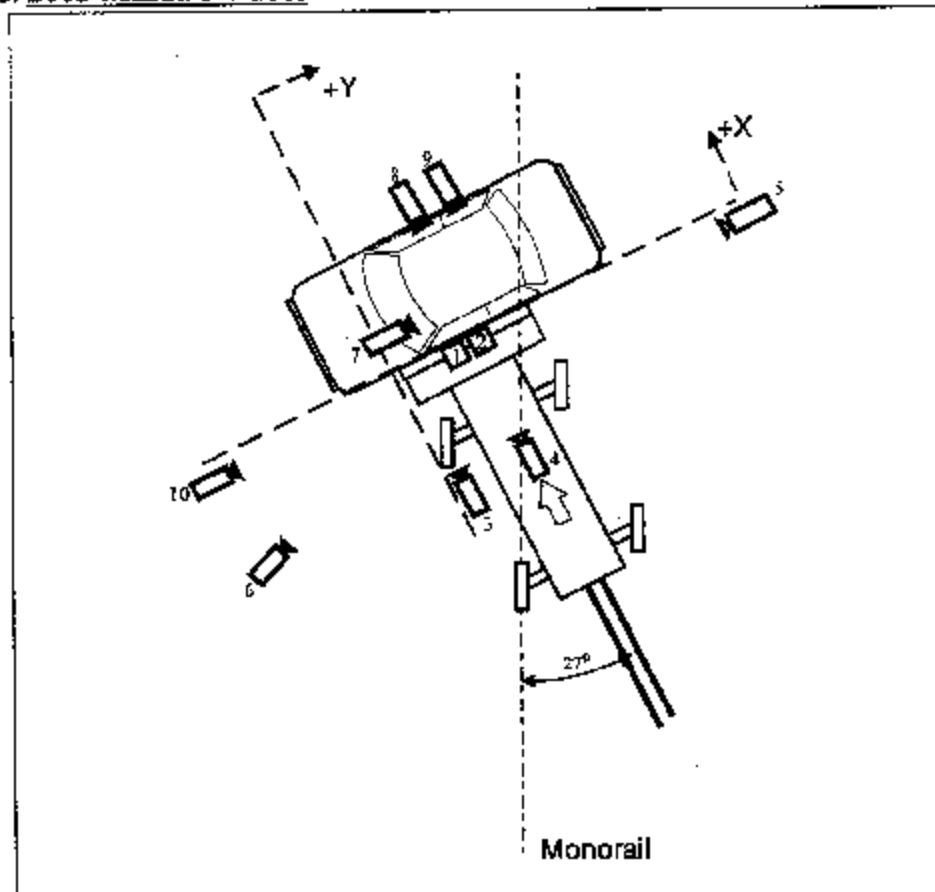
All measurements accurate to within  $\pm 3$  mm.

# Data Sheet 15

## High-Speed Camera Locations and Data Summary

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403



Number	Location	Location, mm			Angle (deg)	Camera	
		X	Y	Z		Lens (mm)	Speed (fps)
1	Overhead wide	250	2150	-5750	-77	8.5	--- <sup>1</sup>
2	Overhead tight	370	1800	-5750	-83	17	1000
3	Onboard MDB left side	-1750	-40	-720	0.4	13	1025
4	Onboard MDB center	-2480	830	-1353	-7.9	25	1000
5	Right side of MDB	-2440	5920	-1120	-1.1	13	--- <sup>2</sup>
6	Left side of MDB	-70	-11120	-1100	-0.1	13	1025
7	Onboard vehicle front	370	-480	-1200	0.4	8	--- <sup>1</sup>
8	Onboard side front door	1640	450	-1060	-4.7	8	725
9	Onboard side rear door	1600	1300	-1140	-6.5	8	--- <sup>3</sup>
10	Digital overall event	-240	-5230	-1100	-4.4	16	1000

+X: Forward (referenced to MDB) from impact point

+Y: Rightward (referenced to MDB) from impact point

+Z: Downward from ground level

<sup>1</sup> Too slow to time

<sup>2</sup> Film broke

<sup>3</sup> LED's too light to read.

Section 5

Vehicle Fuel System Integrity

Data Sheet 16

FMVSS 301 Fuel System Integrity Data

NHTSA No.: C35403

Test Date: 04/01/03

Vehicle Year/Make/Model/Body Style: 2003 Mazda 6 4-door

\*\*\*\*\*

Test Vehicle Impact Type :

- ☐ Frontal (48.28 km/h)  
☐ Oblique (48.28 km/h) with \_\_\_\_° barrier  
face first contacting the (driver/passenger) side  
☐ Rear Moving Barrier (48.28 km/h)  
☐ Lateral Moving Barrier (32.19 km/h)  
☒ Side Impact Moving Deformable Barrier  
(62.1 km/h) contacting the driver's side side

Fuel Spillage Measurement:

1. From impact until vehicle motion ceases
2. For five-minute period after vehicle motion ceases
3. For next 25 minutes.

Actual	Maximum Allowed
0 g	28 g
0 g	142 g
0 g	28 g/1 minute

Solvent Spillage Details :

None

Data Sheet 17

FMVSS 301 Rollover Data

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

0 - 90 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time	<u>1</u>	minutes	<u>30</u>	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	<u>5</u>	minutes	<u>0</u>	seconds
Total	<u>6</u>	minutes	<u>30</u>	seconds
Next whole minute interval	<u>7</u>	minutes		

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None



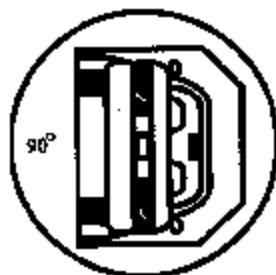
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

90 - 180 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time      1 minutes      30 seconds  
(Spec. Range = 1 to 3 minutes)  
FMVSS 301 Position II Hold Time +      5 minutes      0 seconds  
Total      6 minutes      30 seconds  
Next whole minute interval      7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

180 - 270 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time      1 minutes      30 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time +      5 minutes      0 seconds

Total      6 minutes      30 seconds

Next whole minute interval      7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

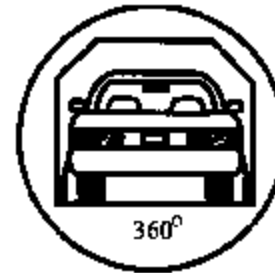
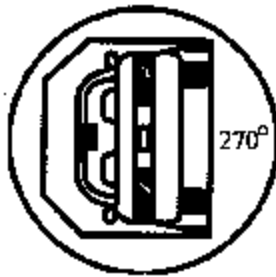
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2003 Mazda 6 4-door

NHTSA No.: C35403

270 - 360 Degrees



1. Determination Of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time      1 minutes      30 seconds  
(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time +      5 minutes      0 seconds

Total      6 minutes      30 seconds

Next whole minute interval      7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

Appendix A

Photographs

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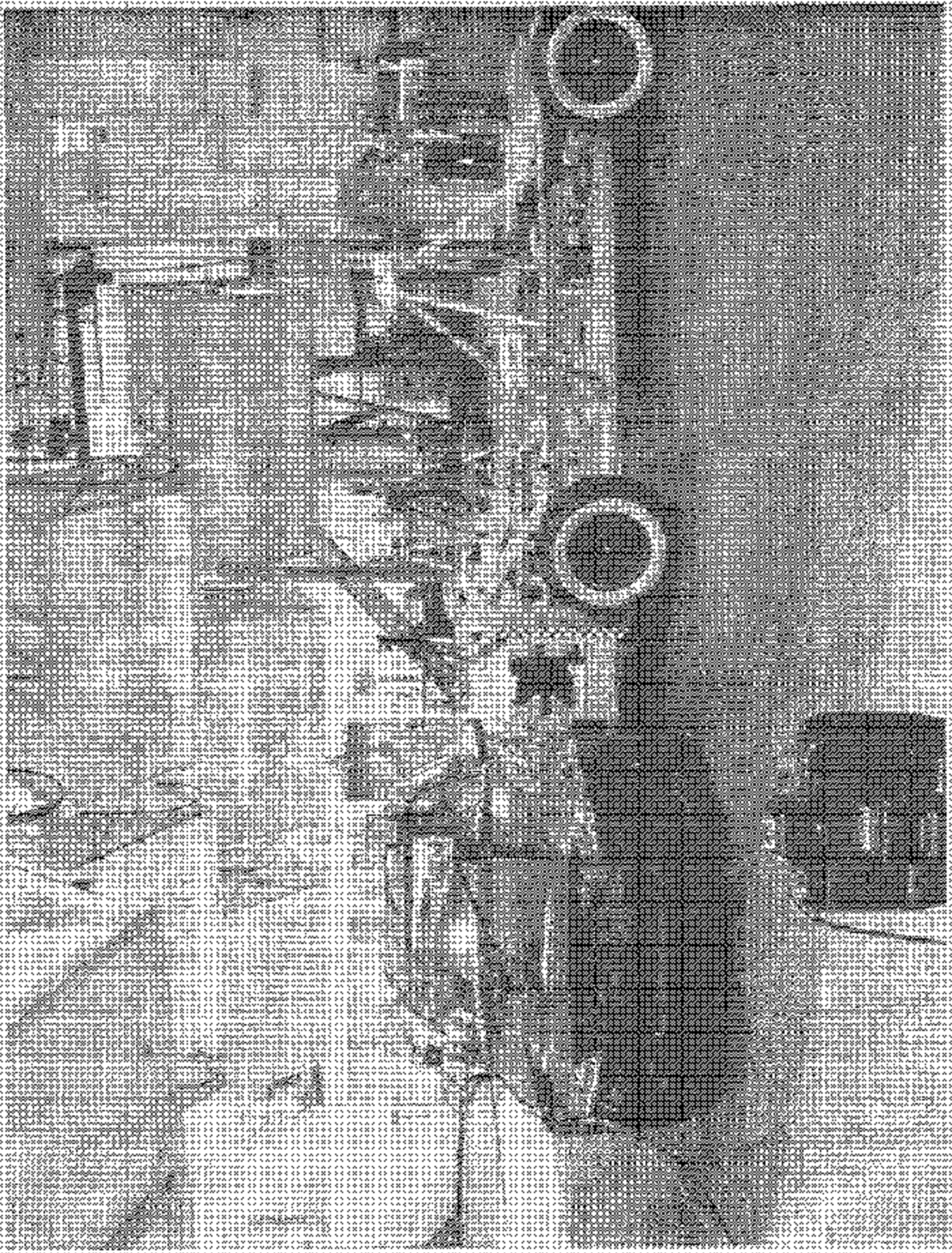


Figure A-1 Pre-Test Front View of Test Vehicle

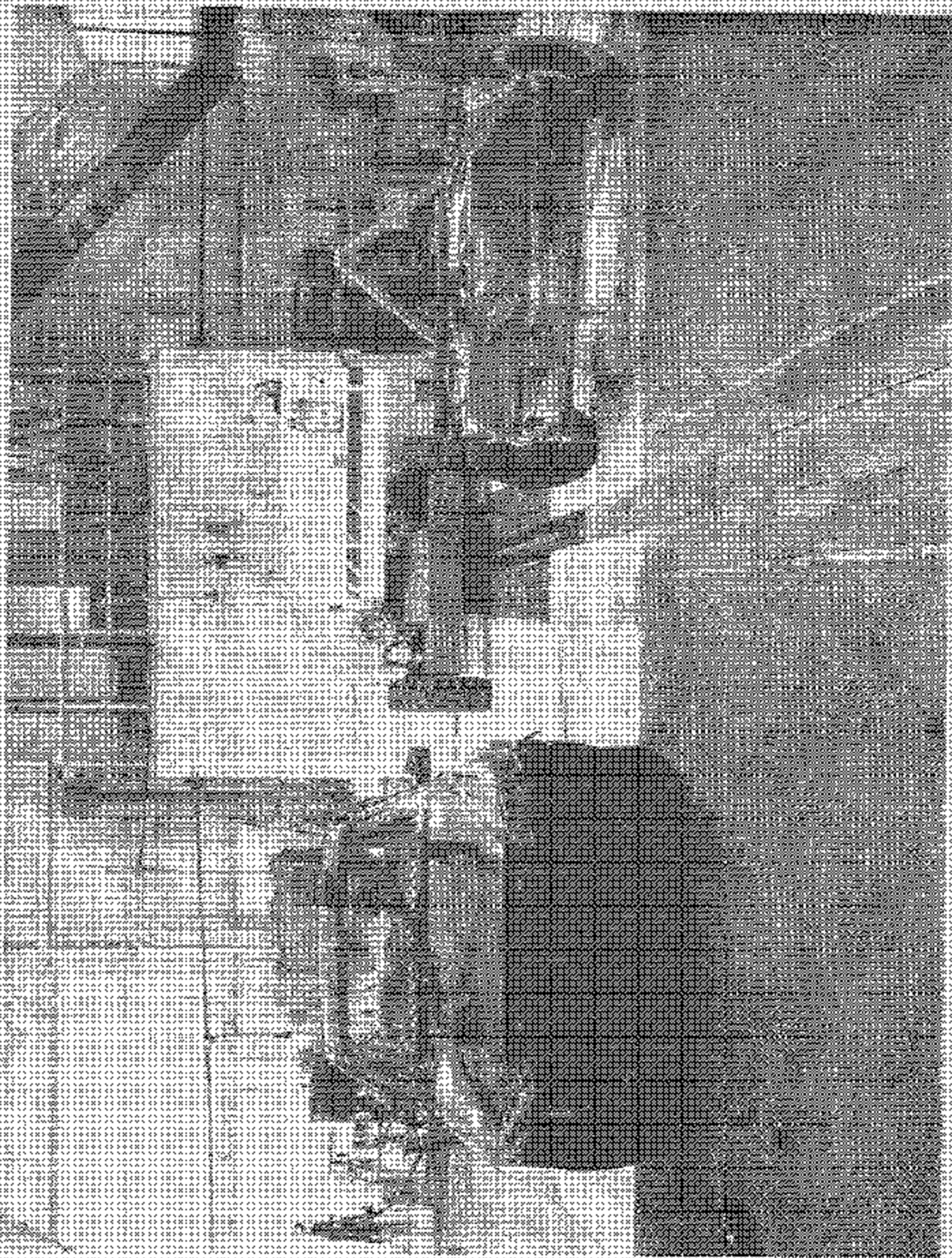


Figure A-2: Post-Test Front View of Test Vehicle



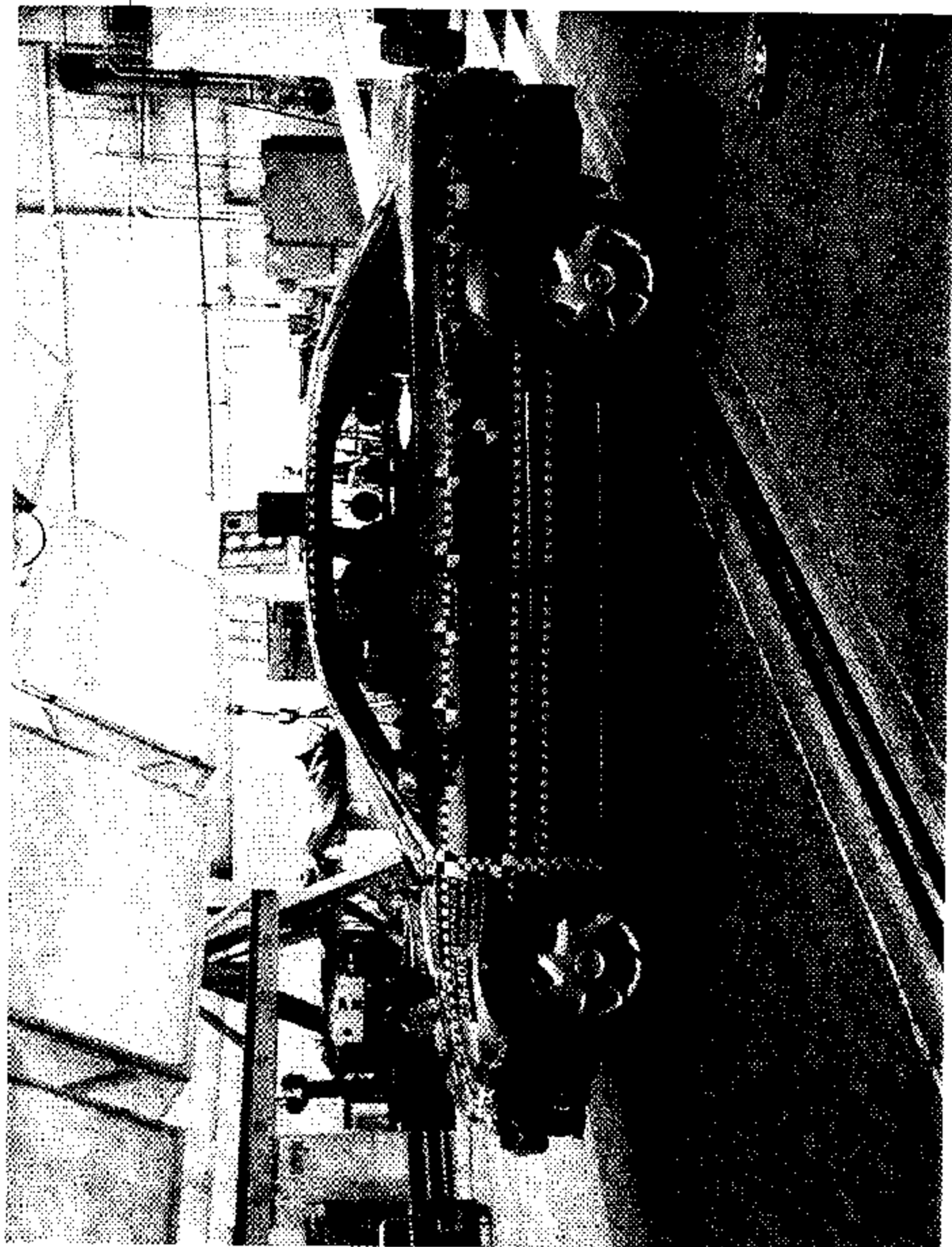


Figure A-3 Pre-Test Impacted Side View of Test Vehicle

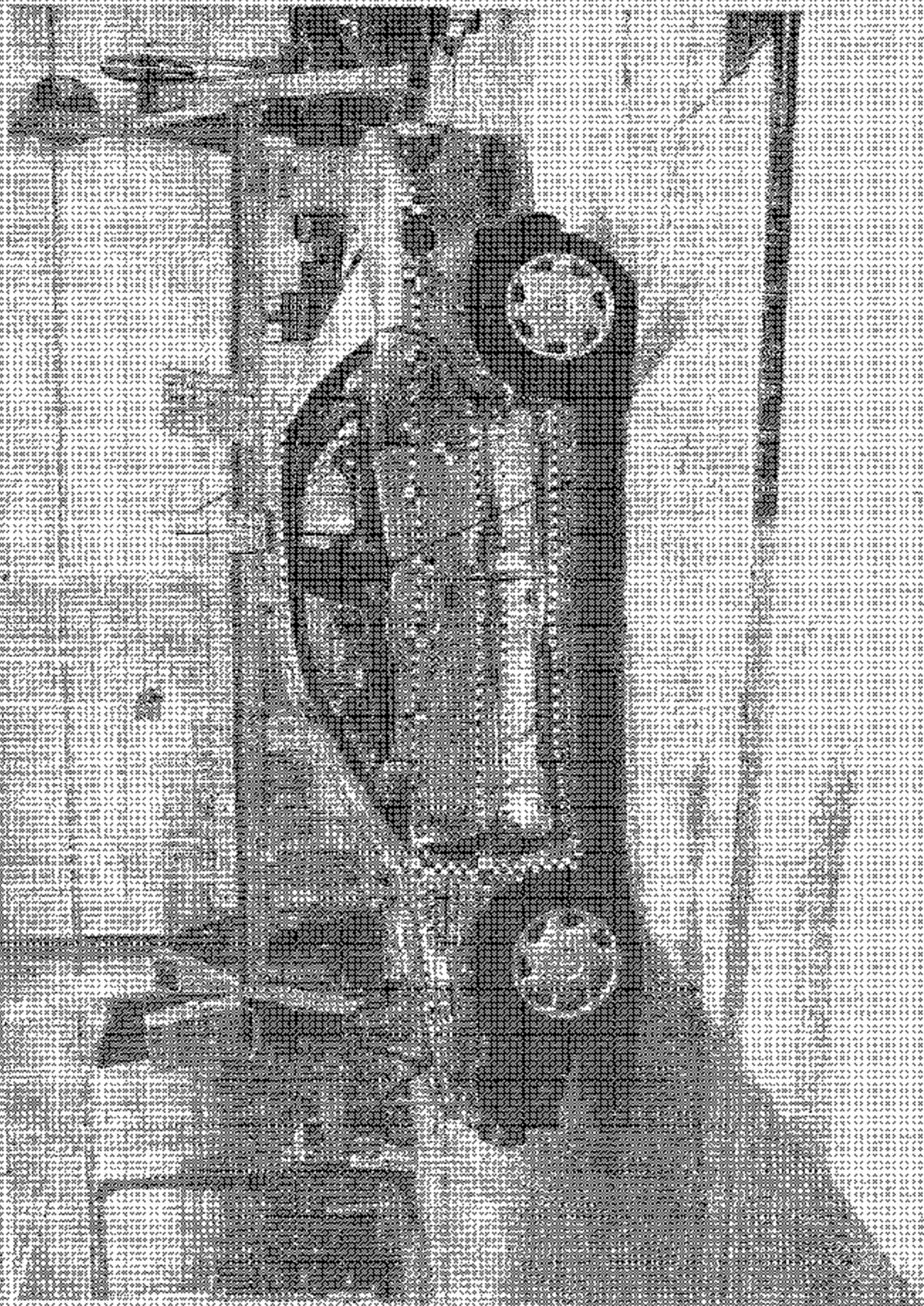


Figure A-4. Post-Test Impacted Side View of Test Vehicle

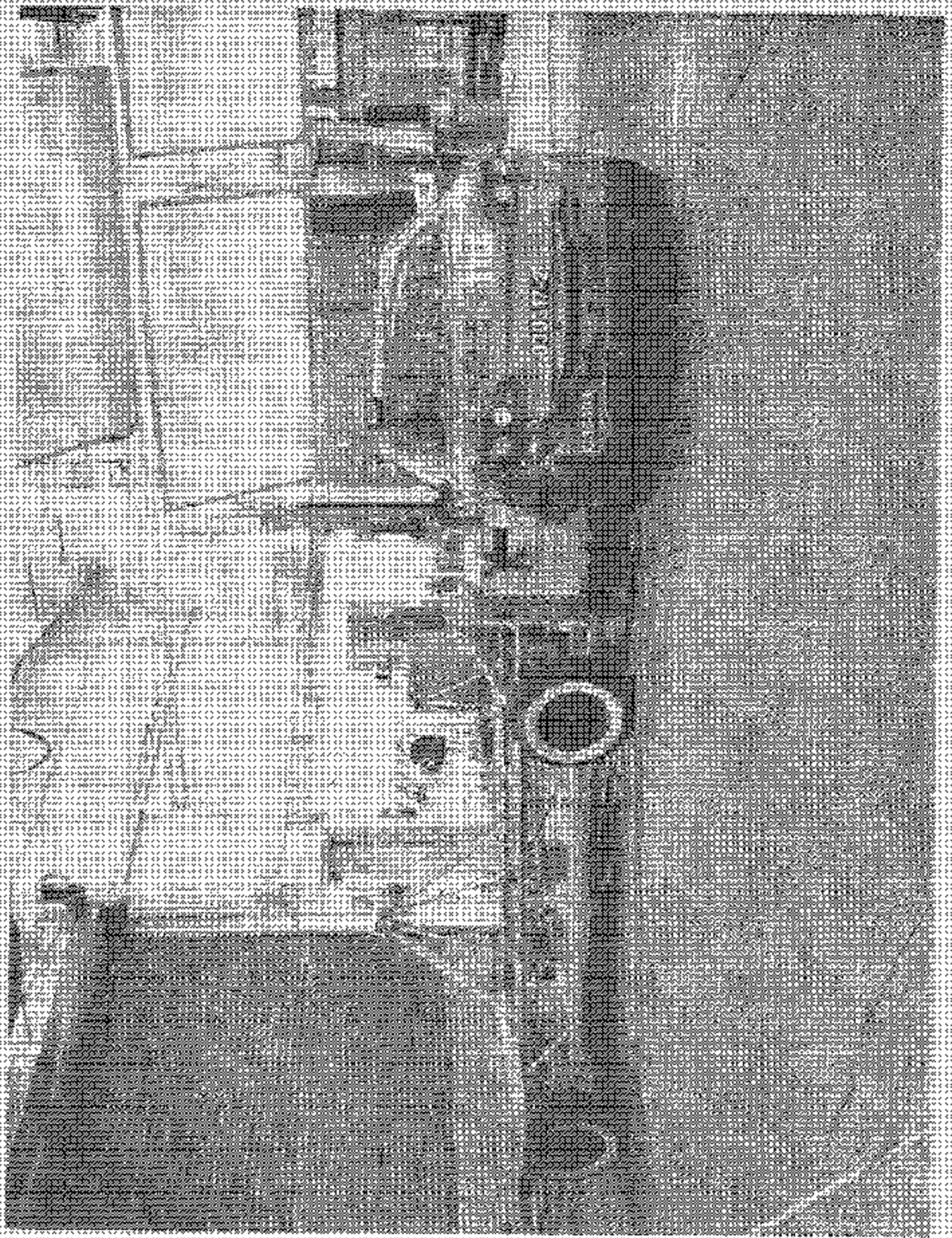


Figure A-3: Pre-Test Rear View of Test Vehicle

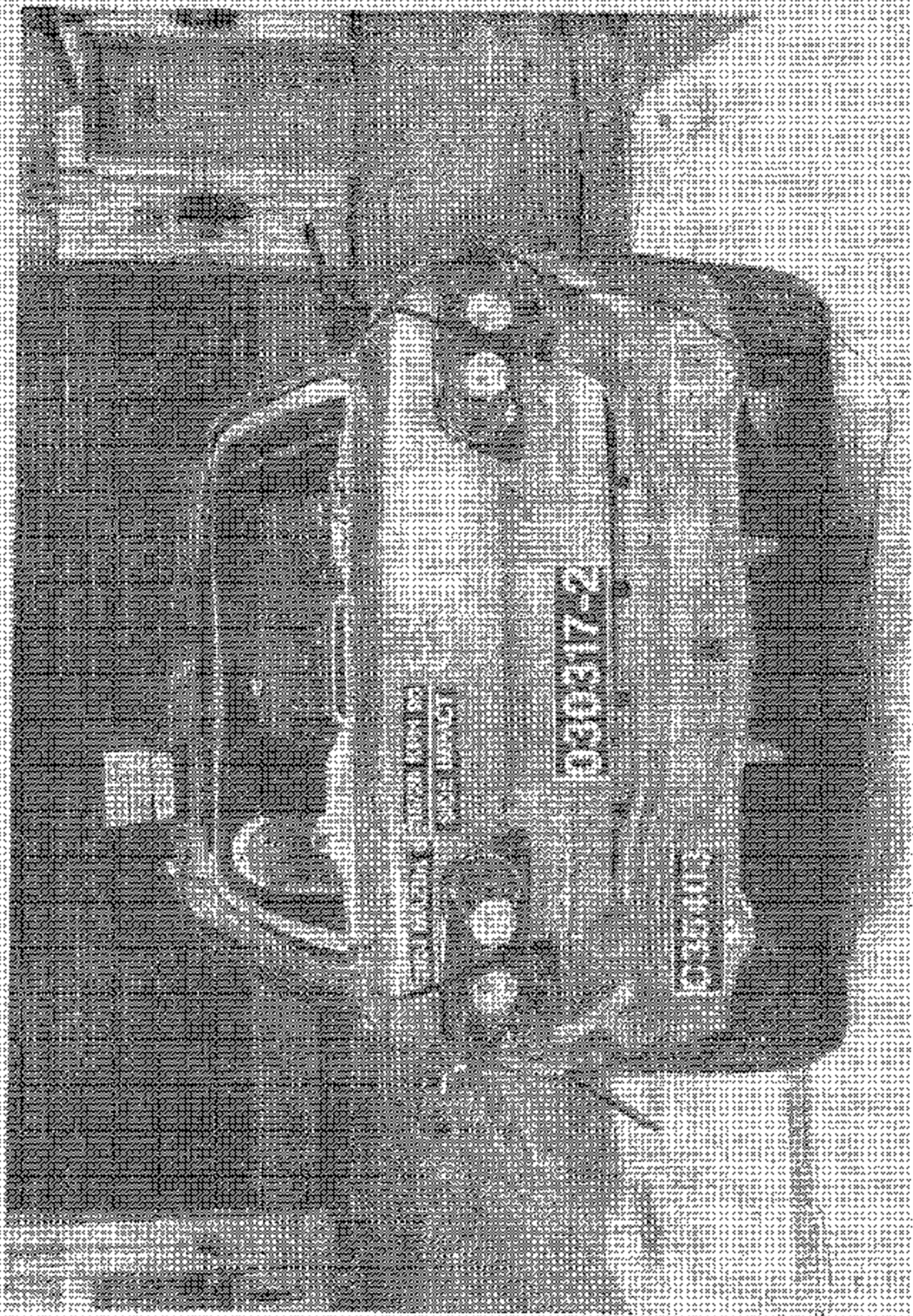


Figure A-6: Post-Test Rear View of Test Vehicle

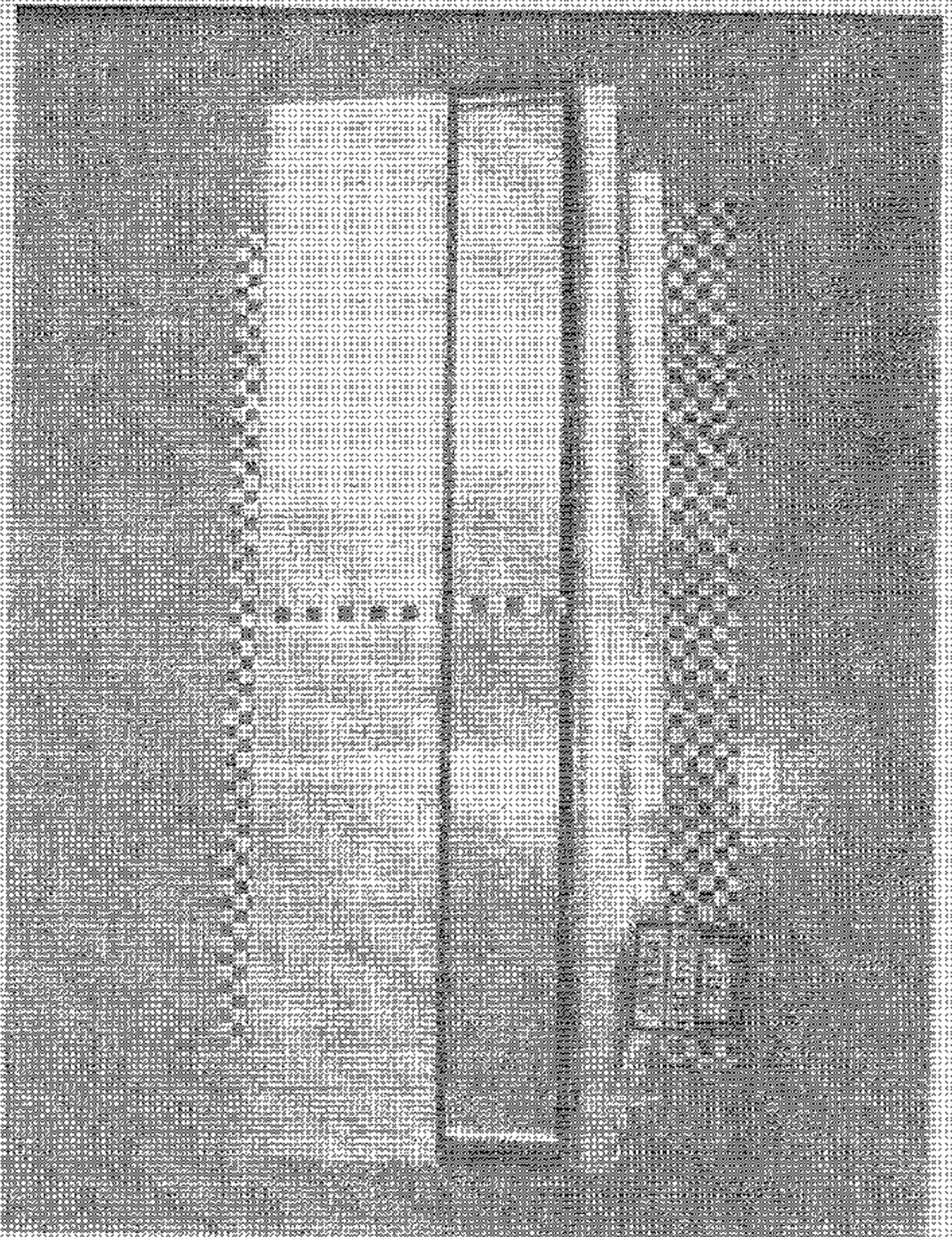


Figure A-7 Pre-Test Frontal View of Impactor Face

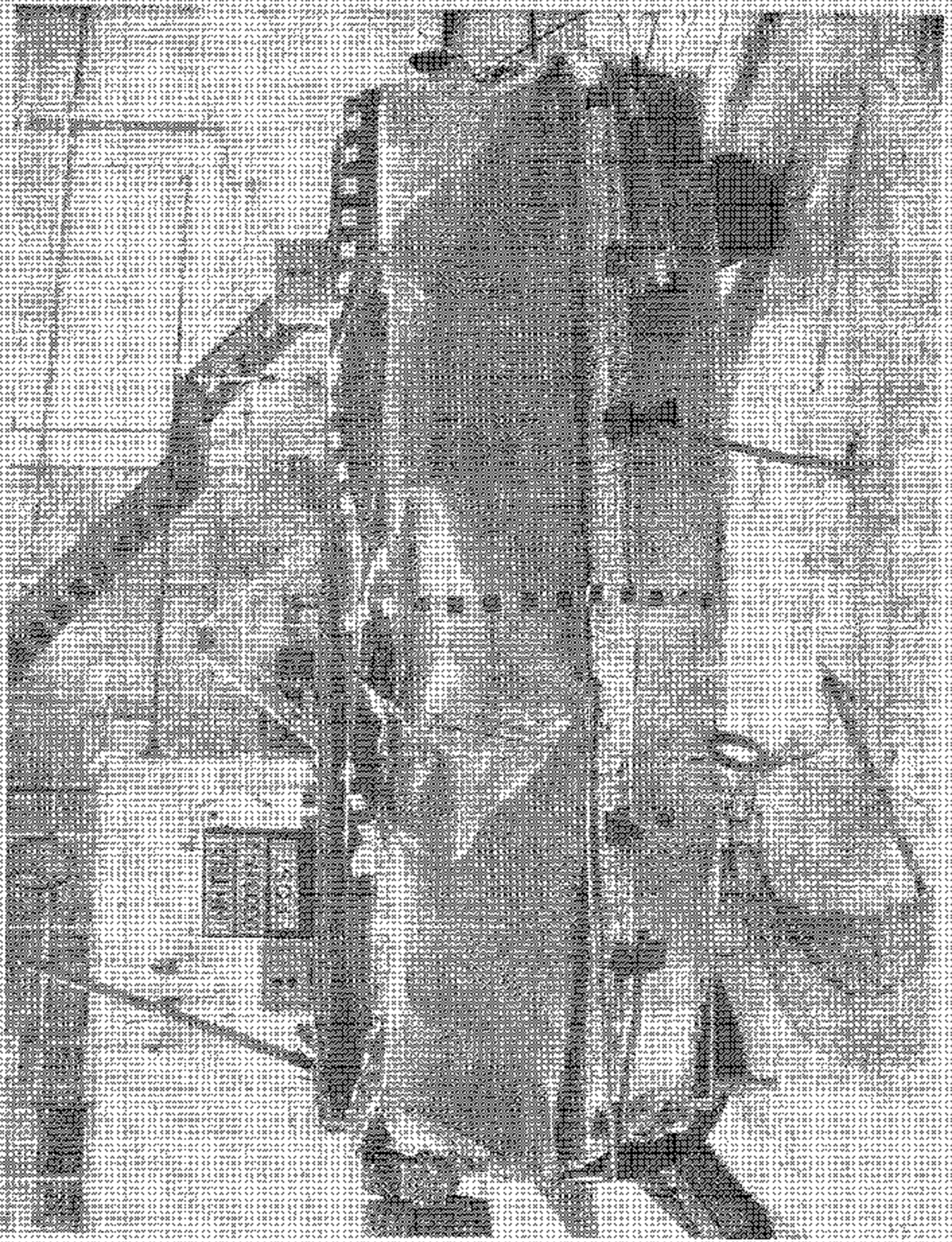


Figure A-8. Post-Test Frontal View of Impactor Face

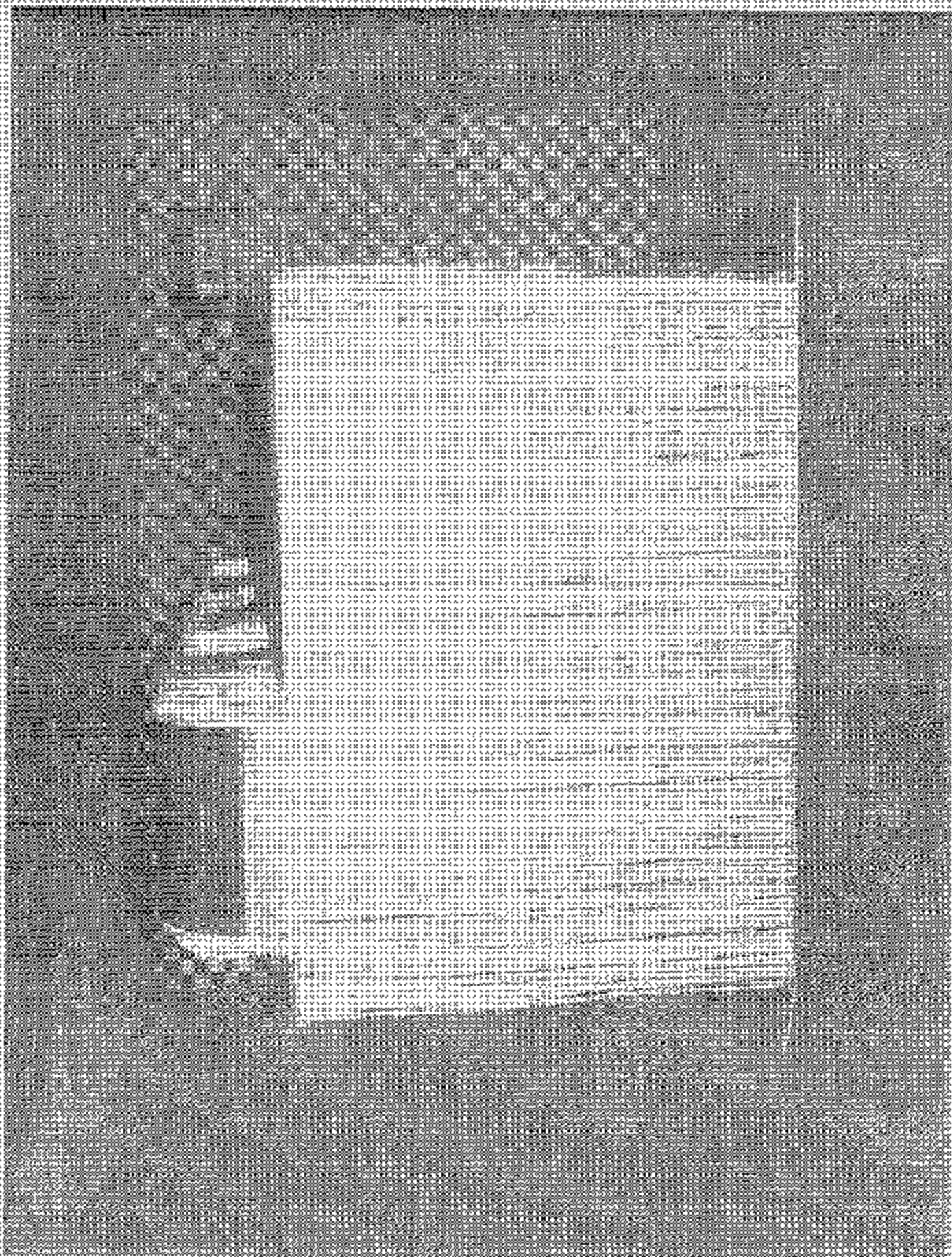


Figure A-7. Pre-Test Left Side View of Impactor Face



Figure A-10 Post-Test Left Side View of Impactor Face



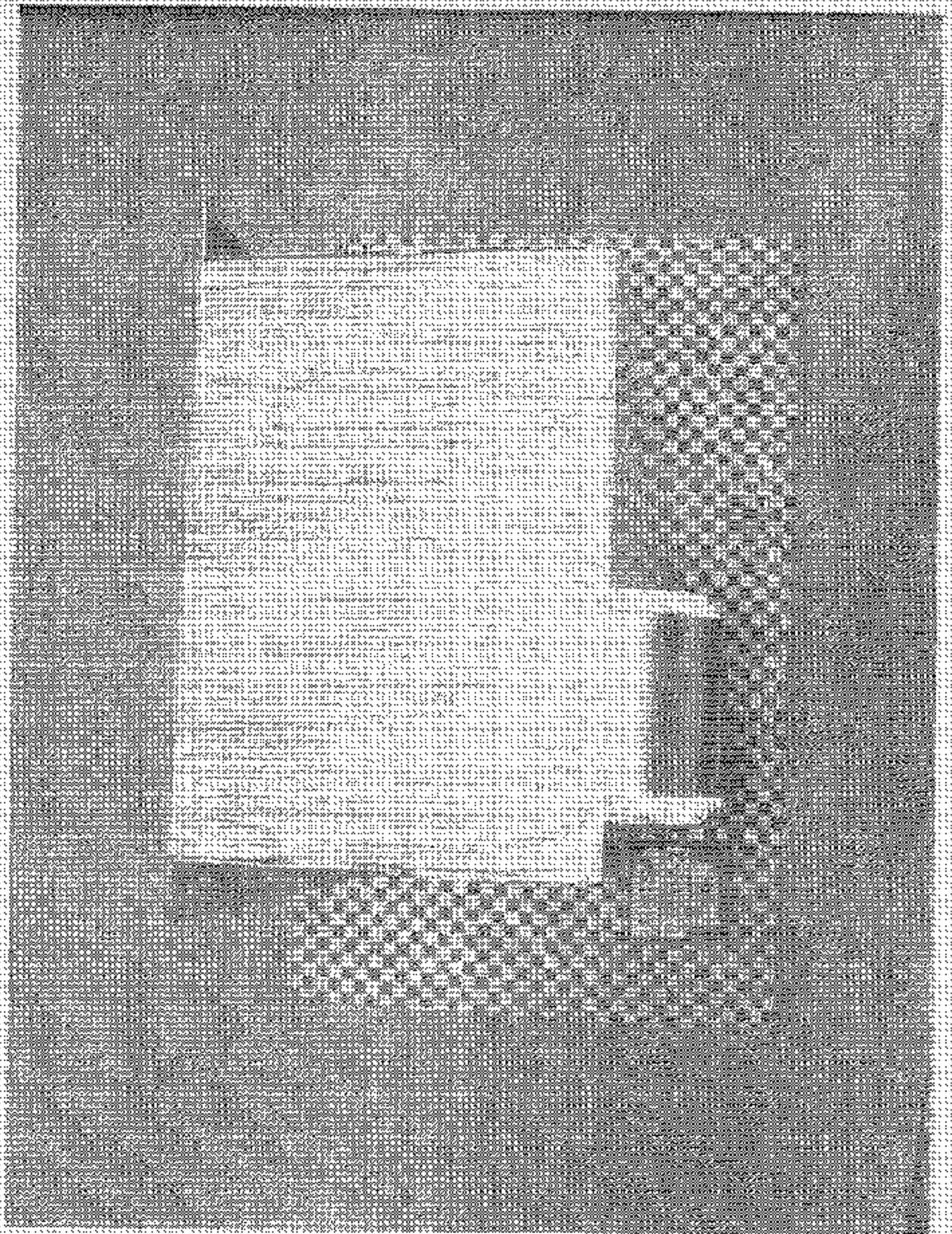


Figure A-11: Pre-Test Right Side View of Impactor Face

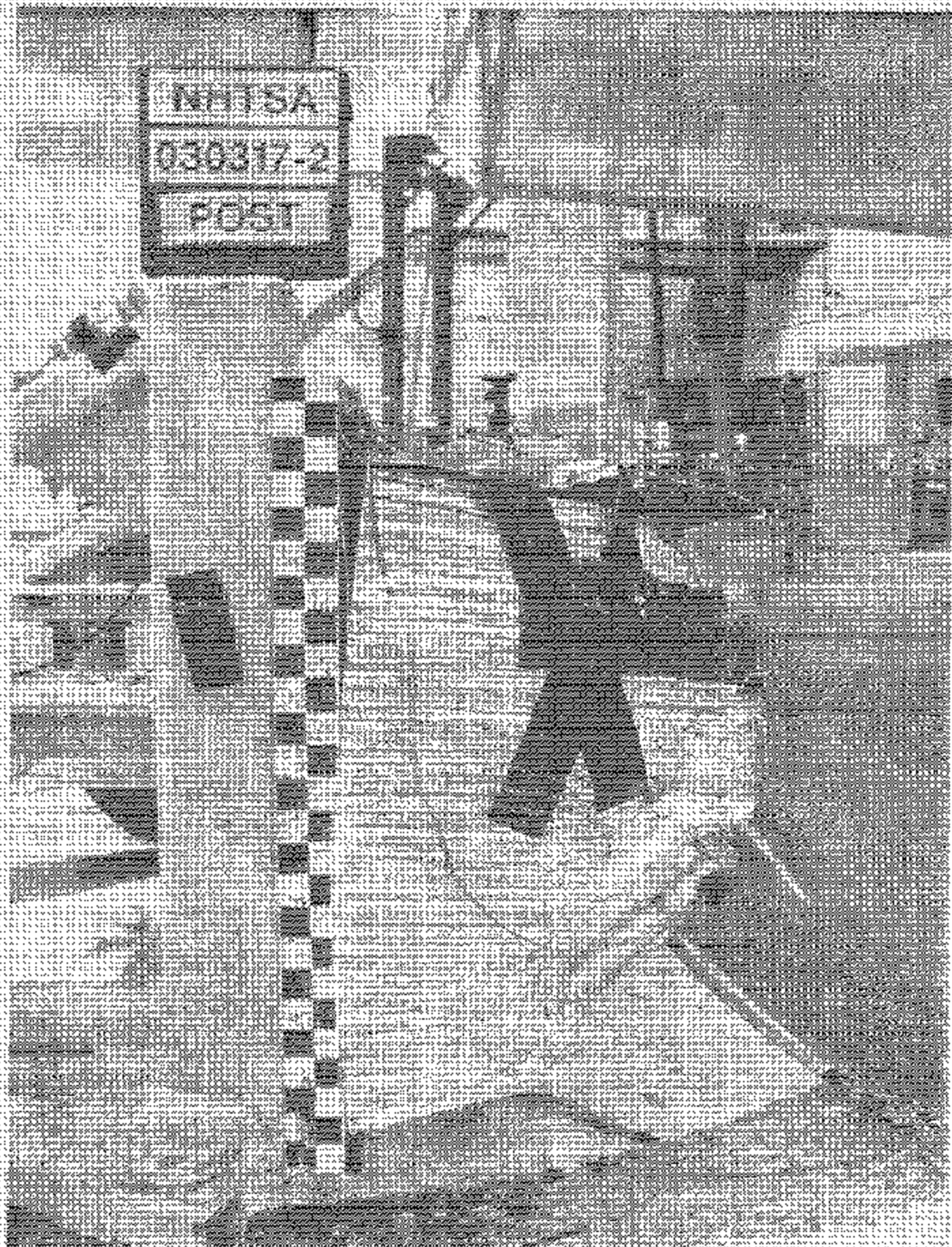


Figure A-12 Post-Test Right Side View of Impactor Face

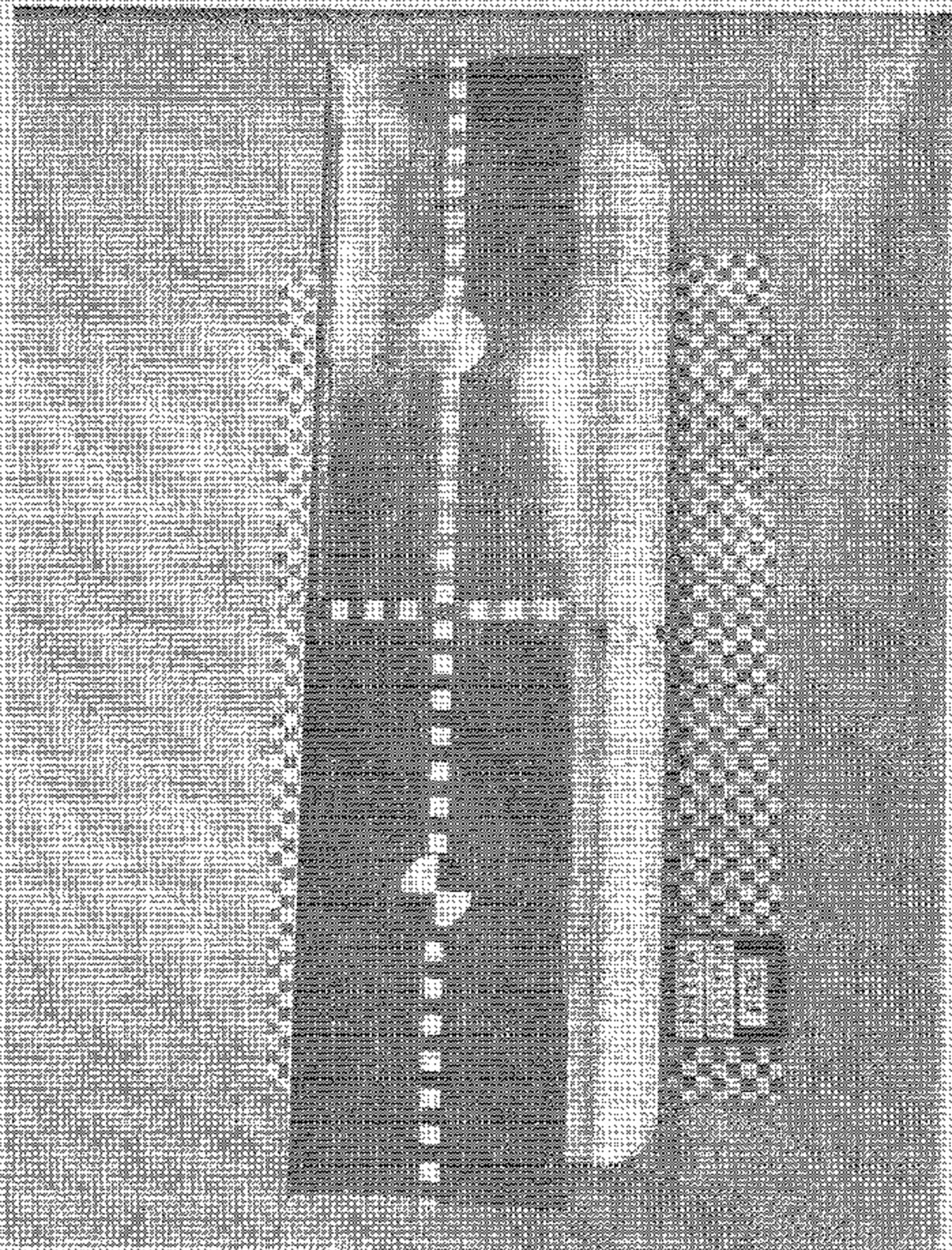


Figure A-13. Pre-Test Top View of Impactor Face

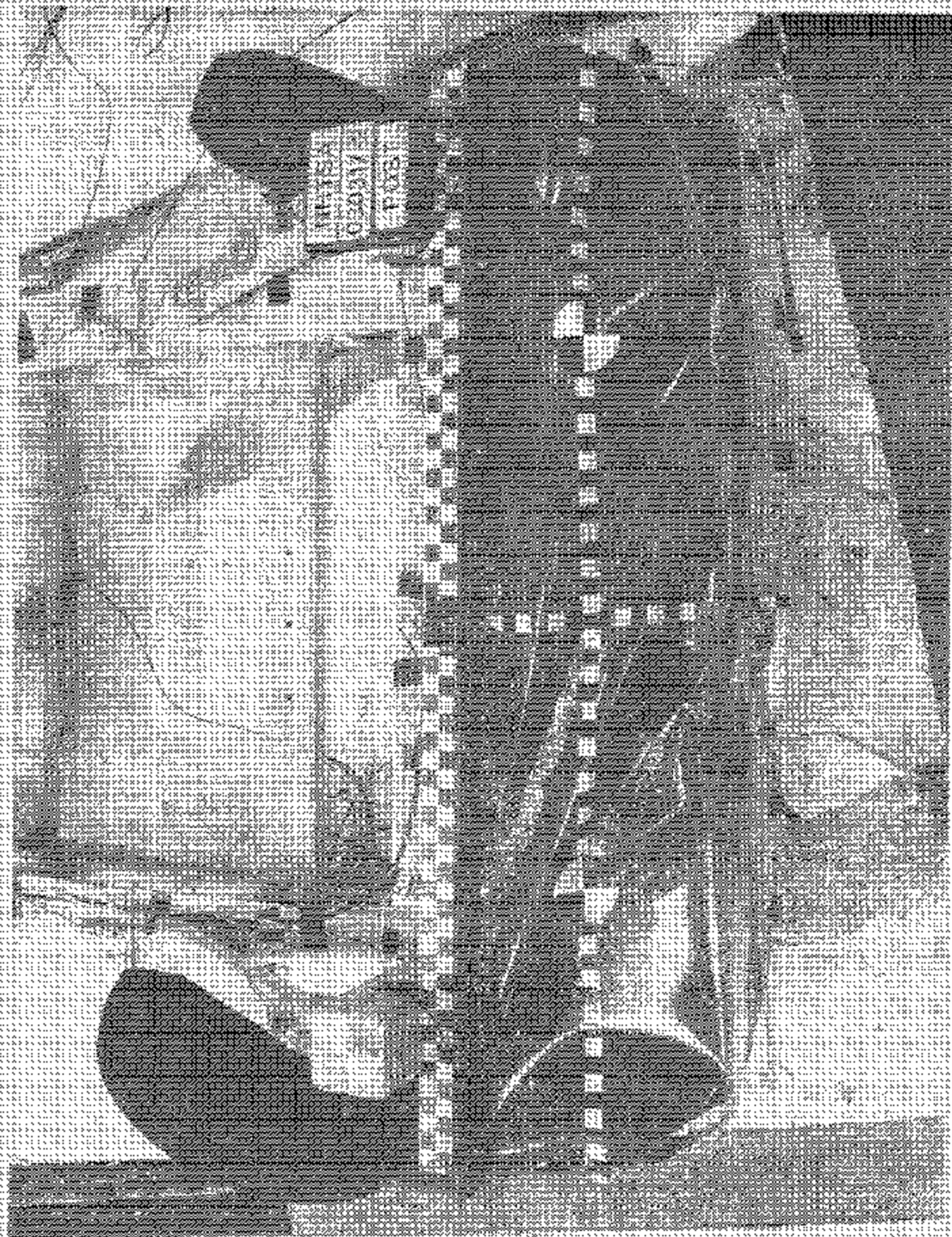


Figure A-14. Post-Test Top View of Impactor Face

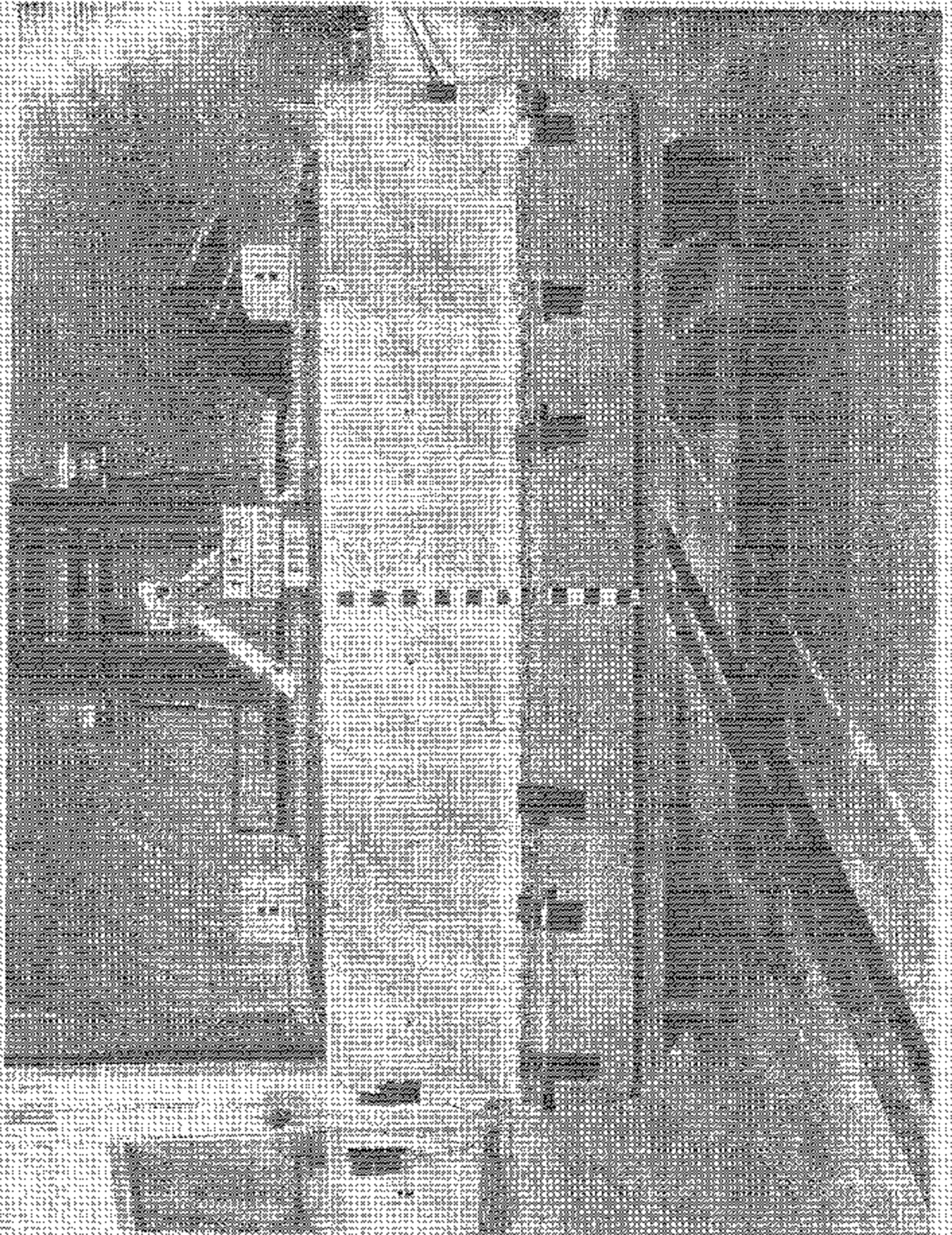


Figure A-15 Pre-Test View of MDB Showing Contact Switches in Place

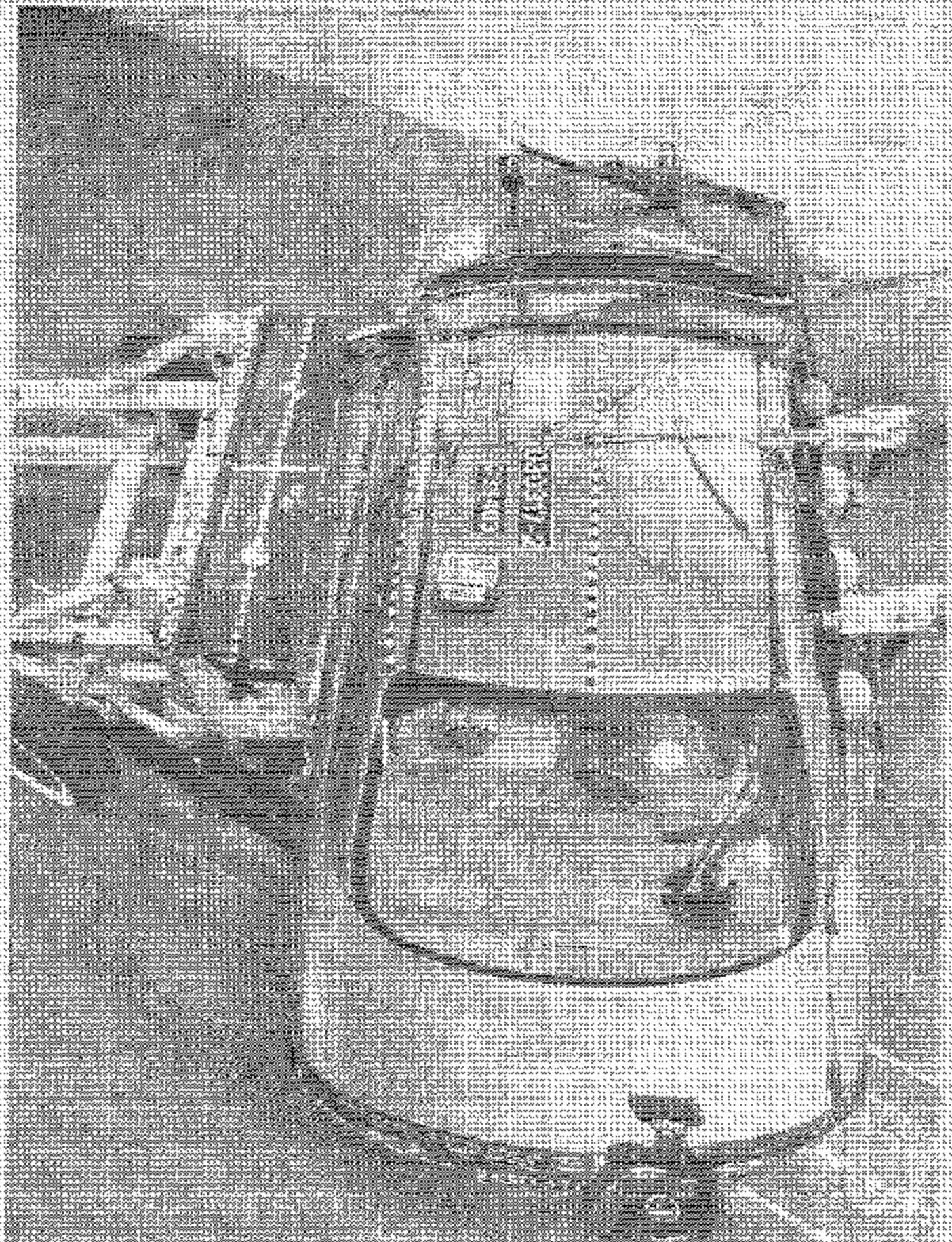


Figure A-16 Pre-Test Overhead View of NPH Aligned with Vehicle



Figure A-17 Post-Test Overhead View of MDB and Vehicle



Figure A-18 Pre-Test Right Occupant Compartment View of Front SLD





Figure A-19 Post-Test Right Occupant Compartment View of Front SUV

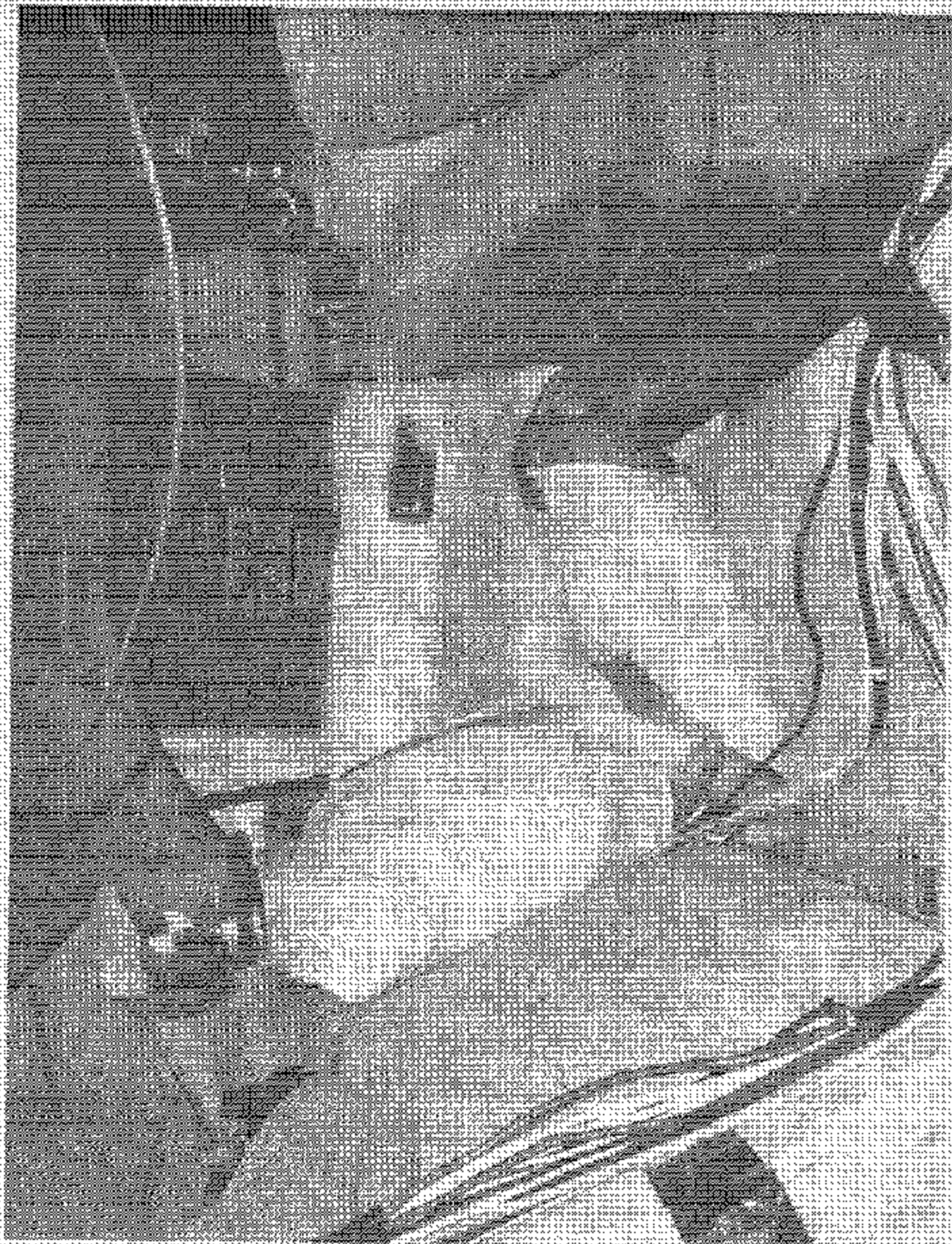


Figure A-20: Pre-Test Right Occupant Compartment View of Rear S/D



Figure A-21 Post-Test Right Occupant Compartment View of Rear SID

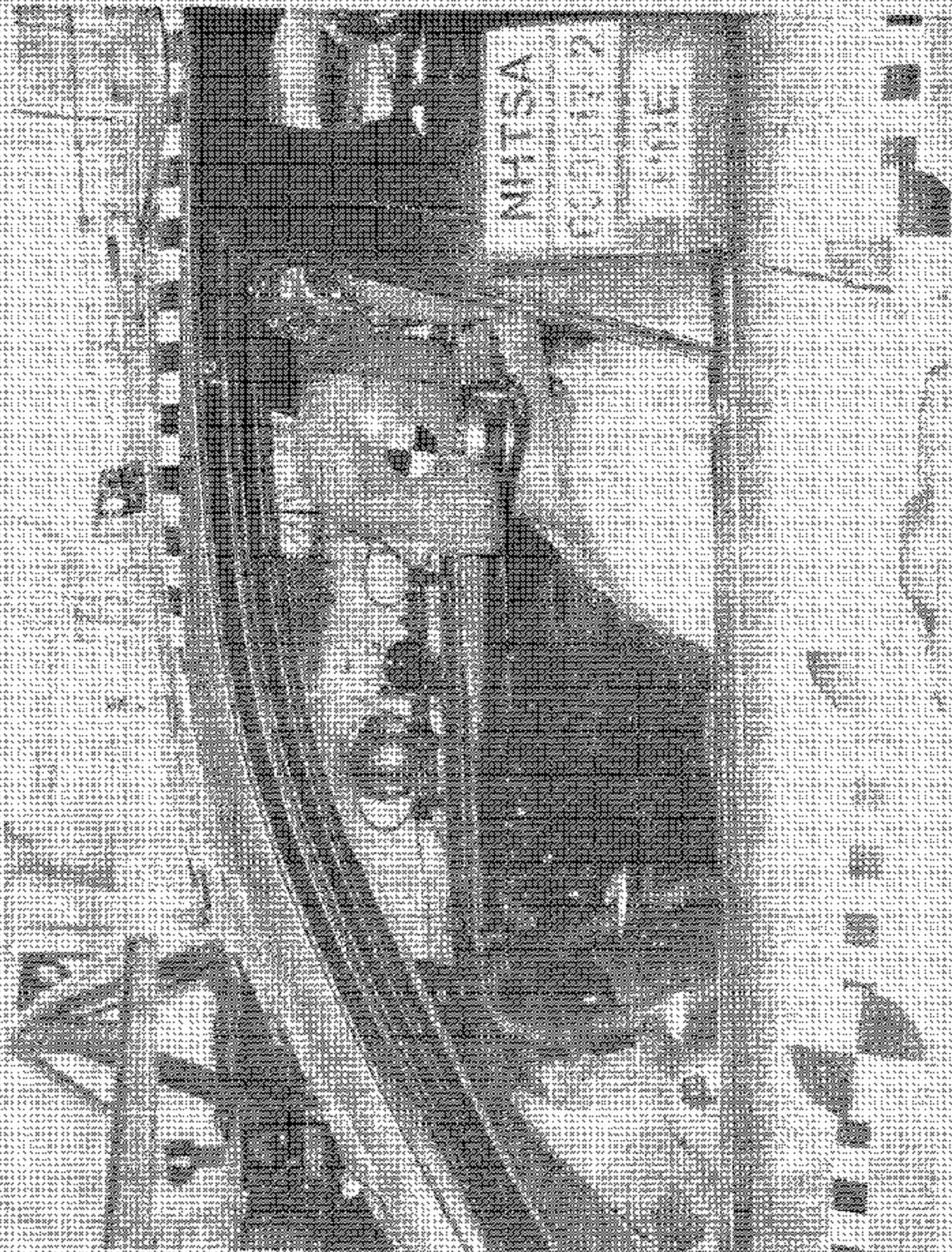


Figure A-22 Pre-Test Left View of Front SIB

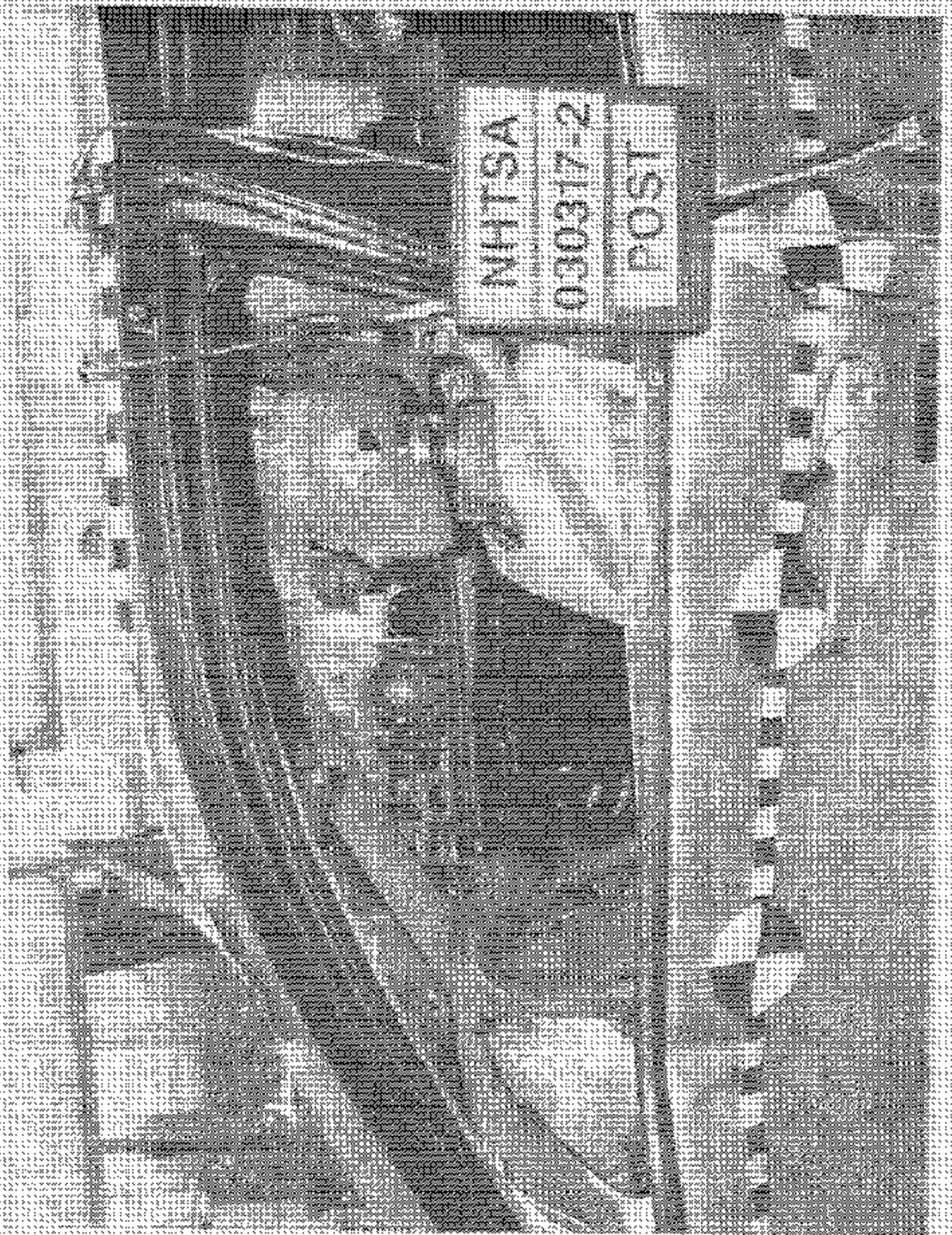


Figure A-23 Post-Test Left View of Front SID

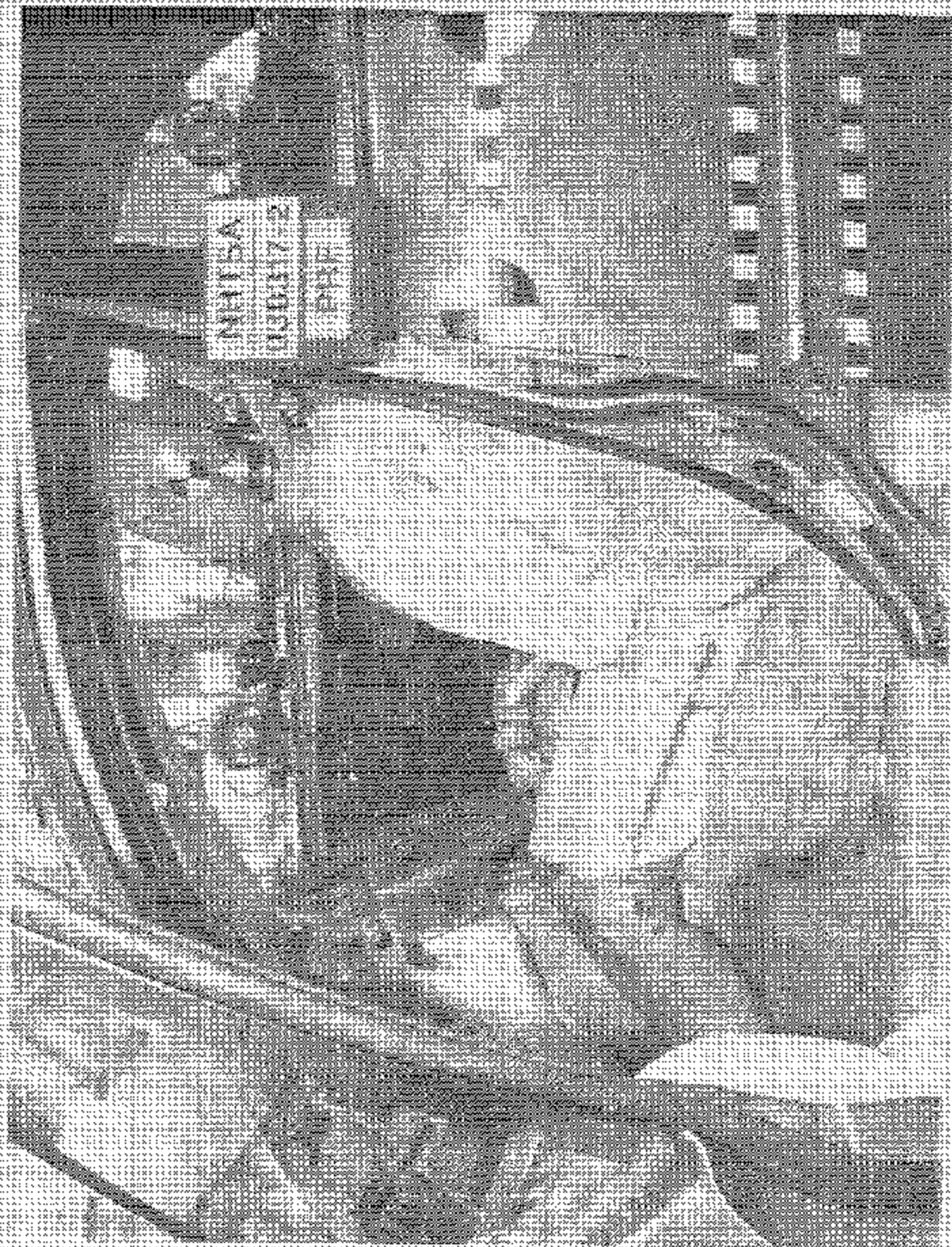


Figure A-24 Pre-Test Left View of Front 810 and Belt Position



Figure A-25 Pre-Test Left View of Front SID and Door Clearance

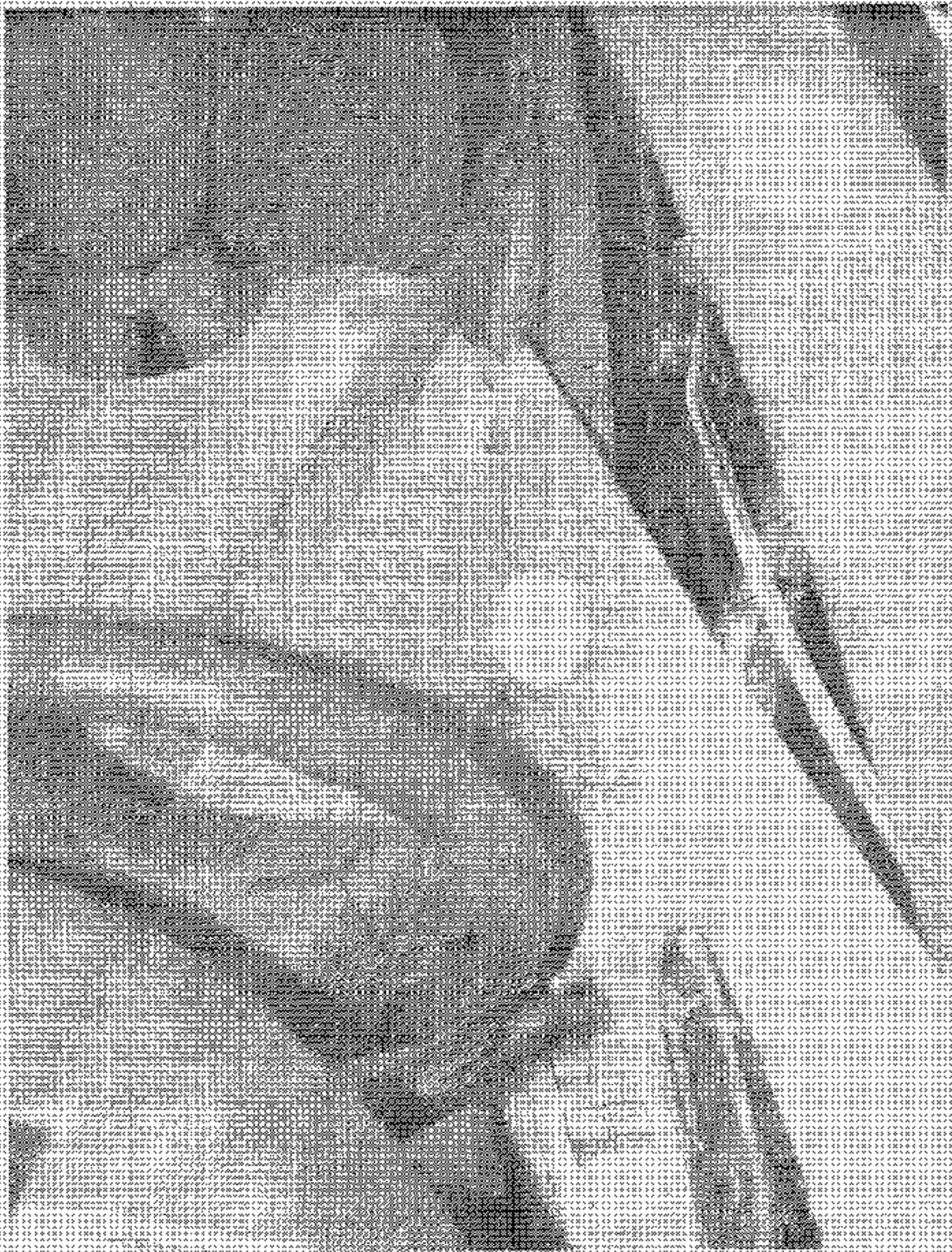


Figure A-26 Post-Test Left View of Frost SID and Door Clearance





Figure A-27 Pre-Test Left View of Rear Side

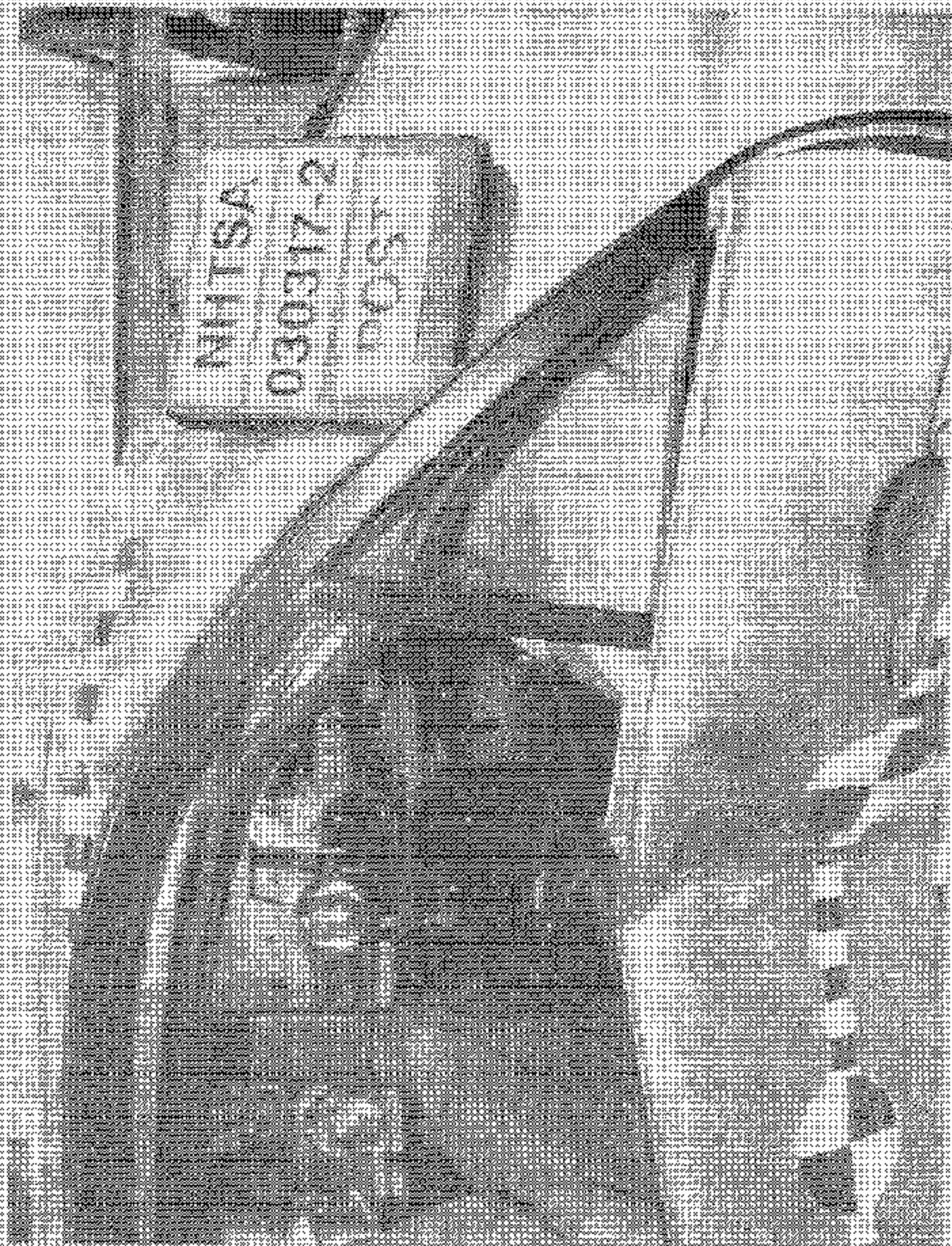


Figure A-28: Post-Test Left View of Rear SID

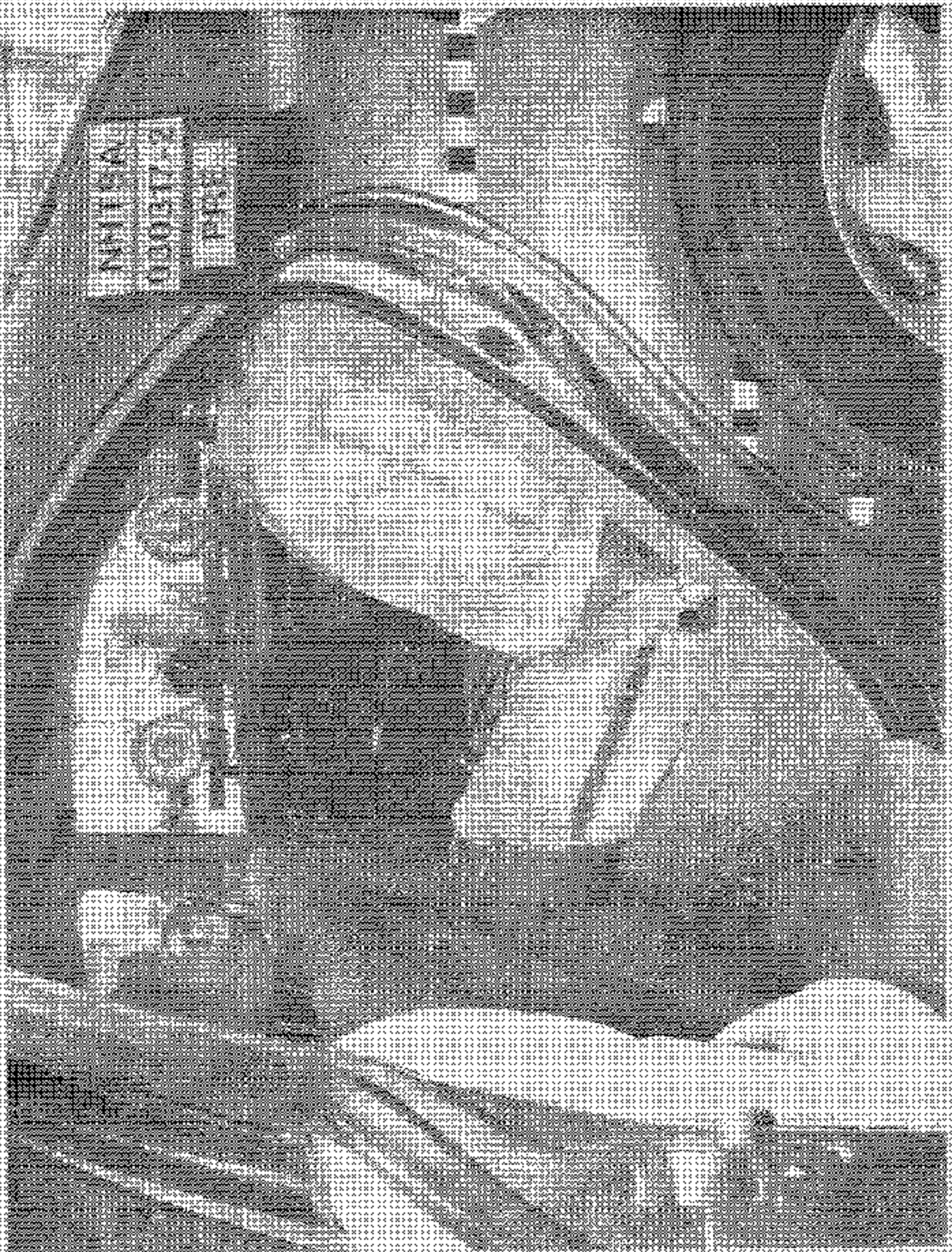


Figure A-29: Pre-Test Left of Rear NID and Belt Position

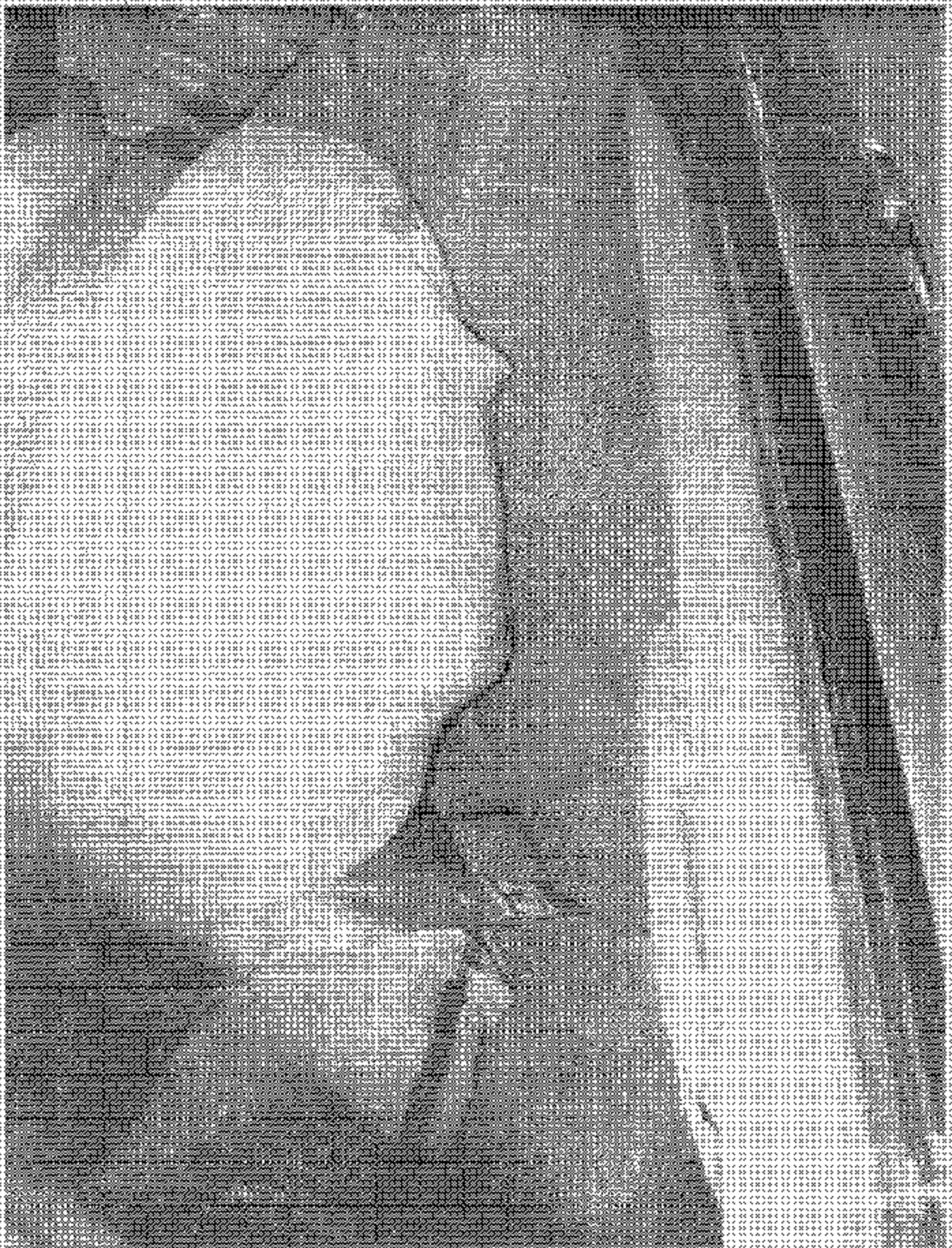


Figure A-30 Pre-Test Left View of Rear SHD and Door Clearance

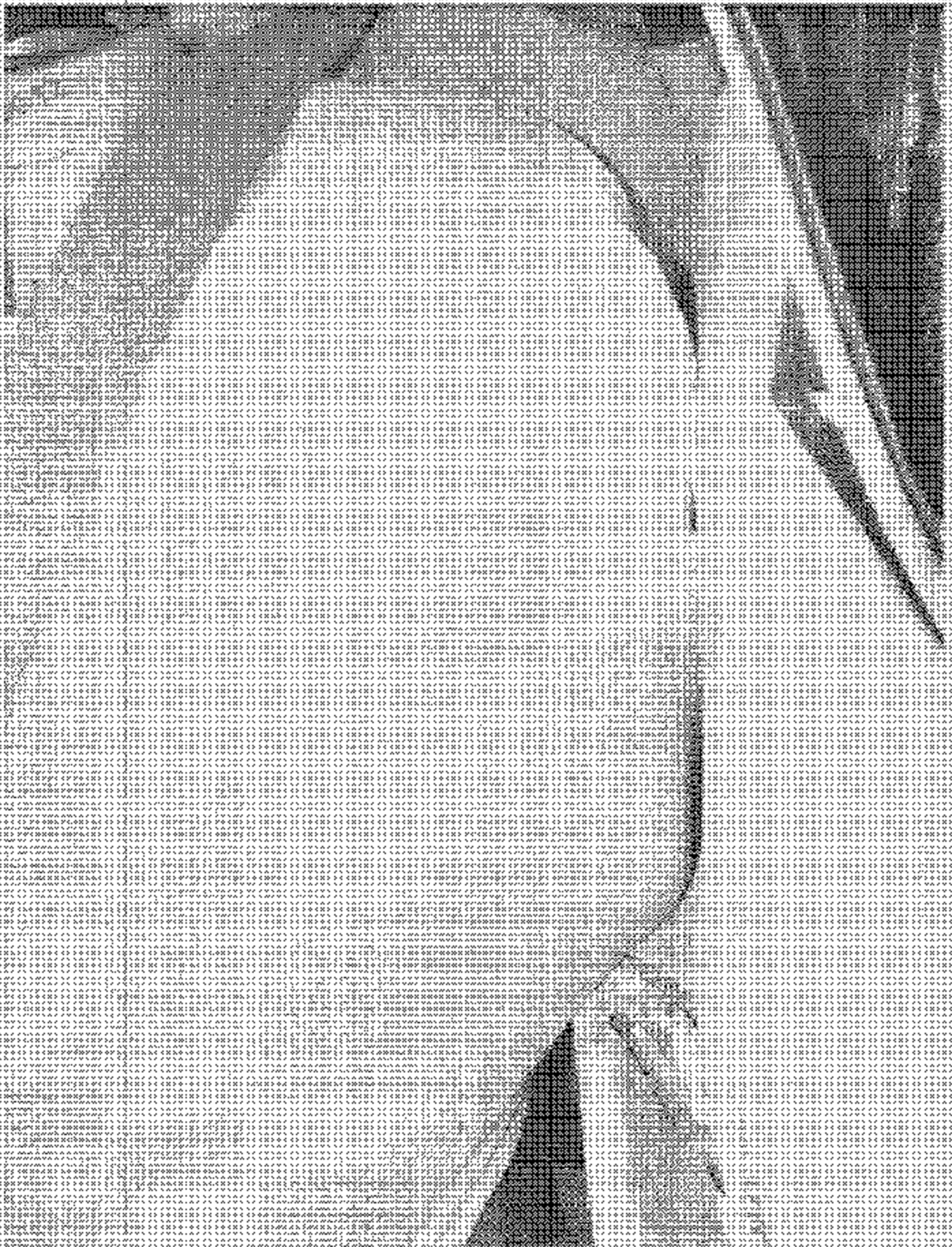


Figure A-31 Post-Test Left View of Rear SID and Door Clearance

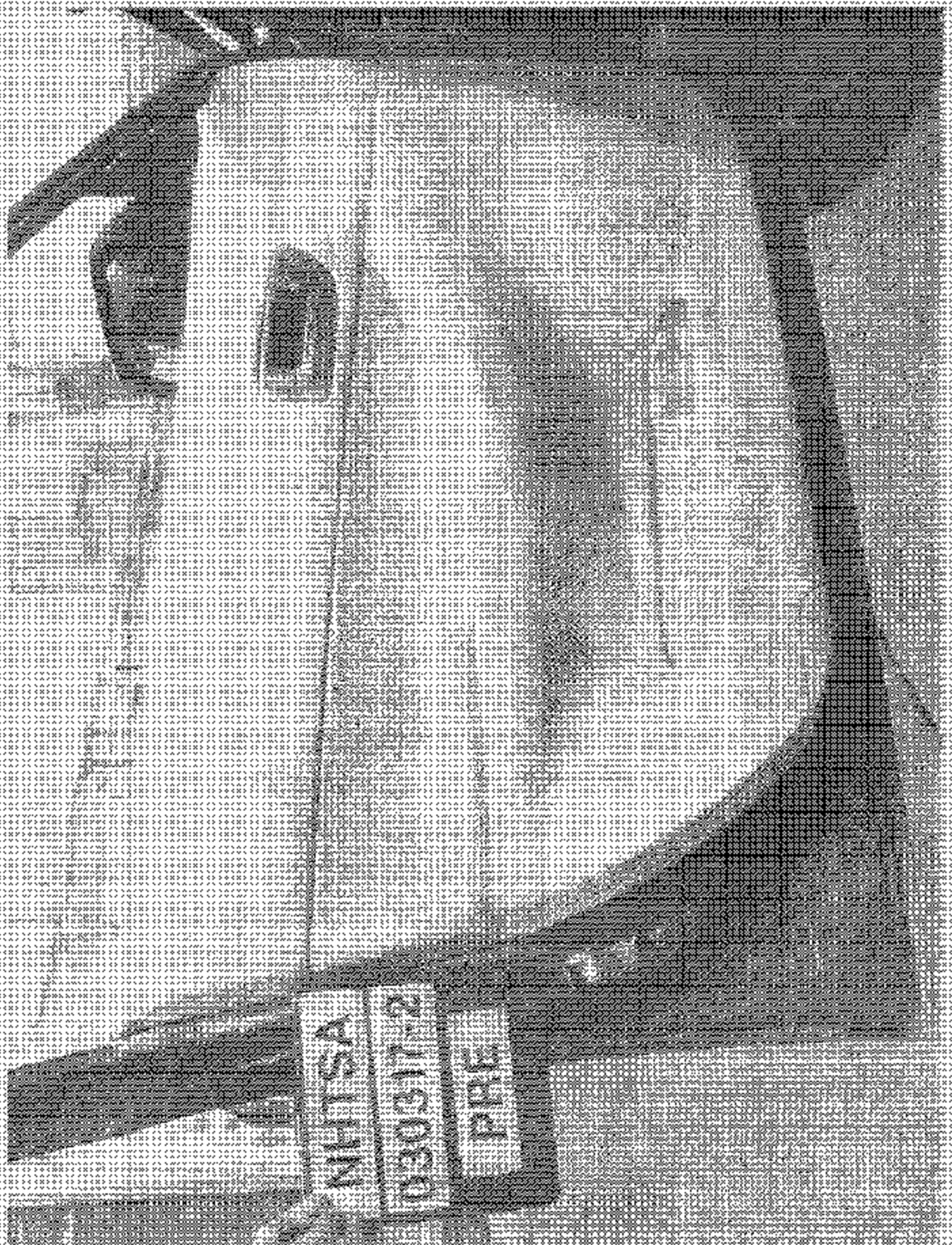


Figure A-32 Pre-Test Interior of Front Door

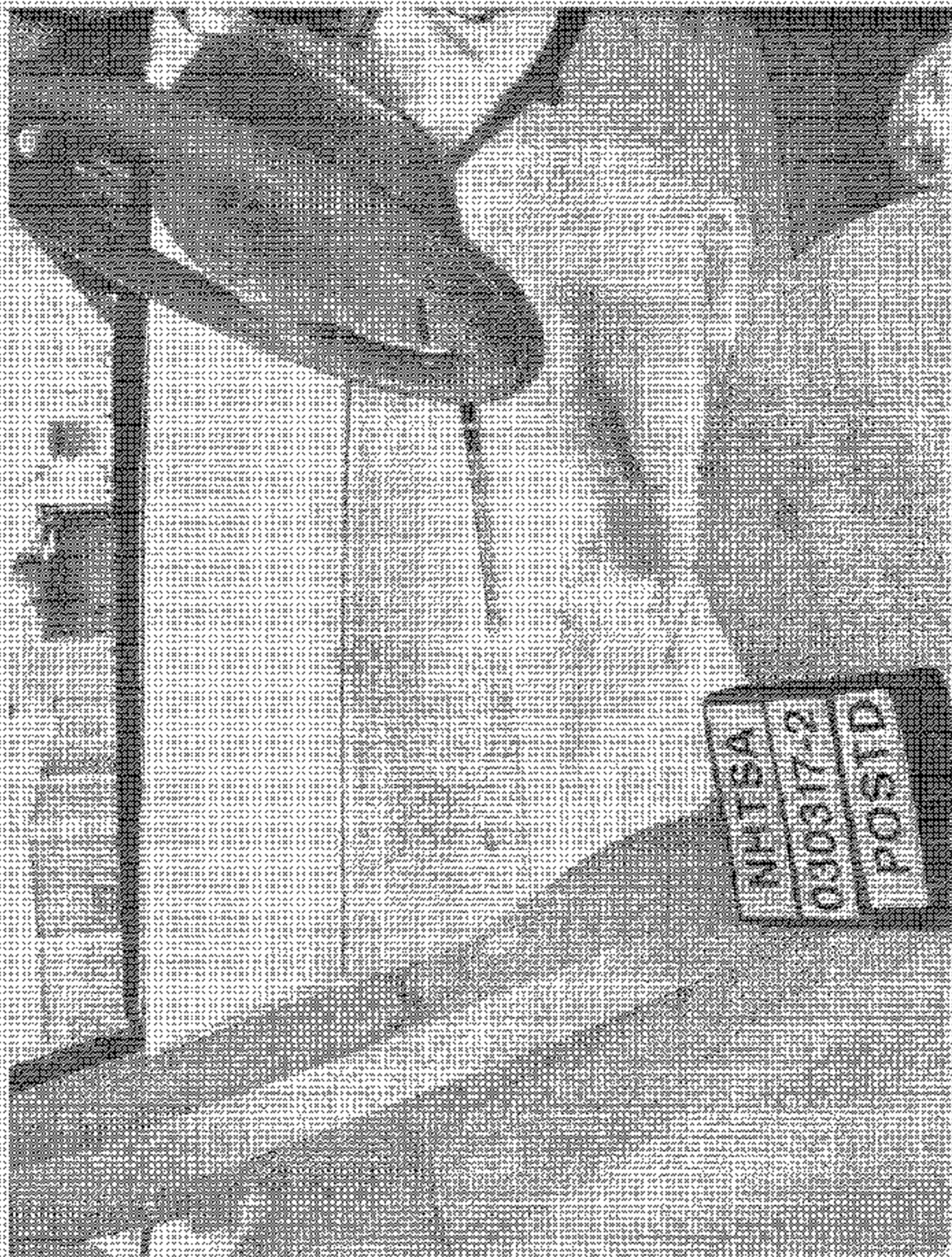


Figure A-35: Post-Test Interior of Fire Door Showing NIB Impact Locations



Figure A-34: Post-Test from SM Contact - View 1



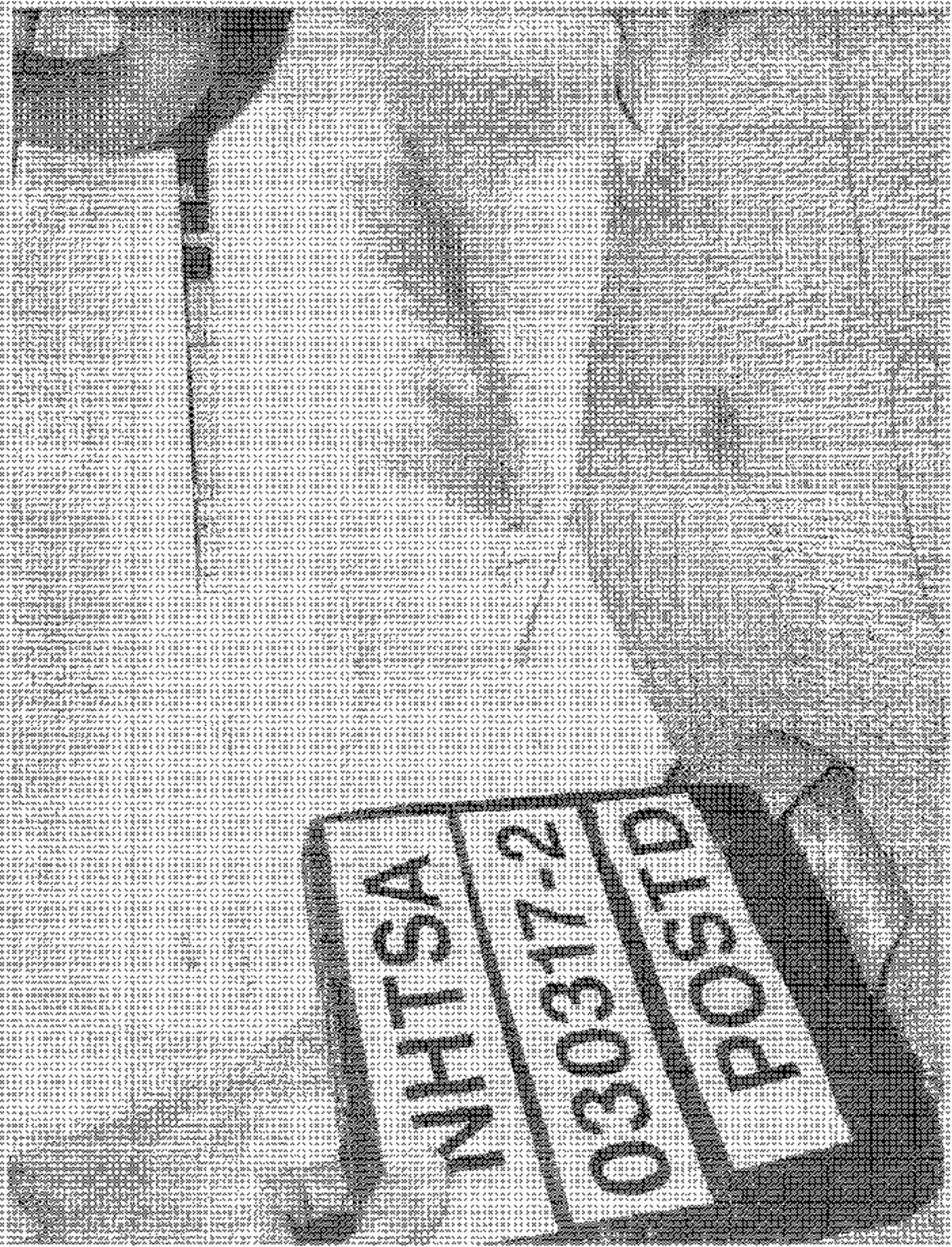


Figure A-35 Post-Test Front NH Commur - View 2

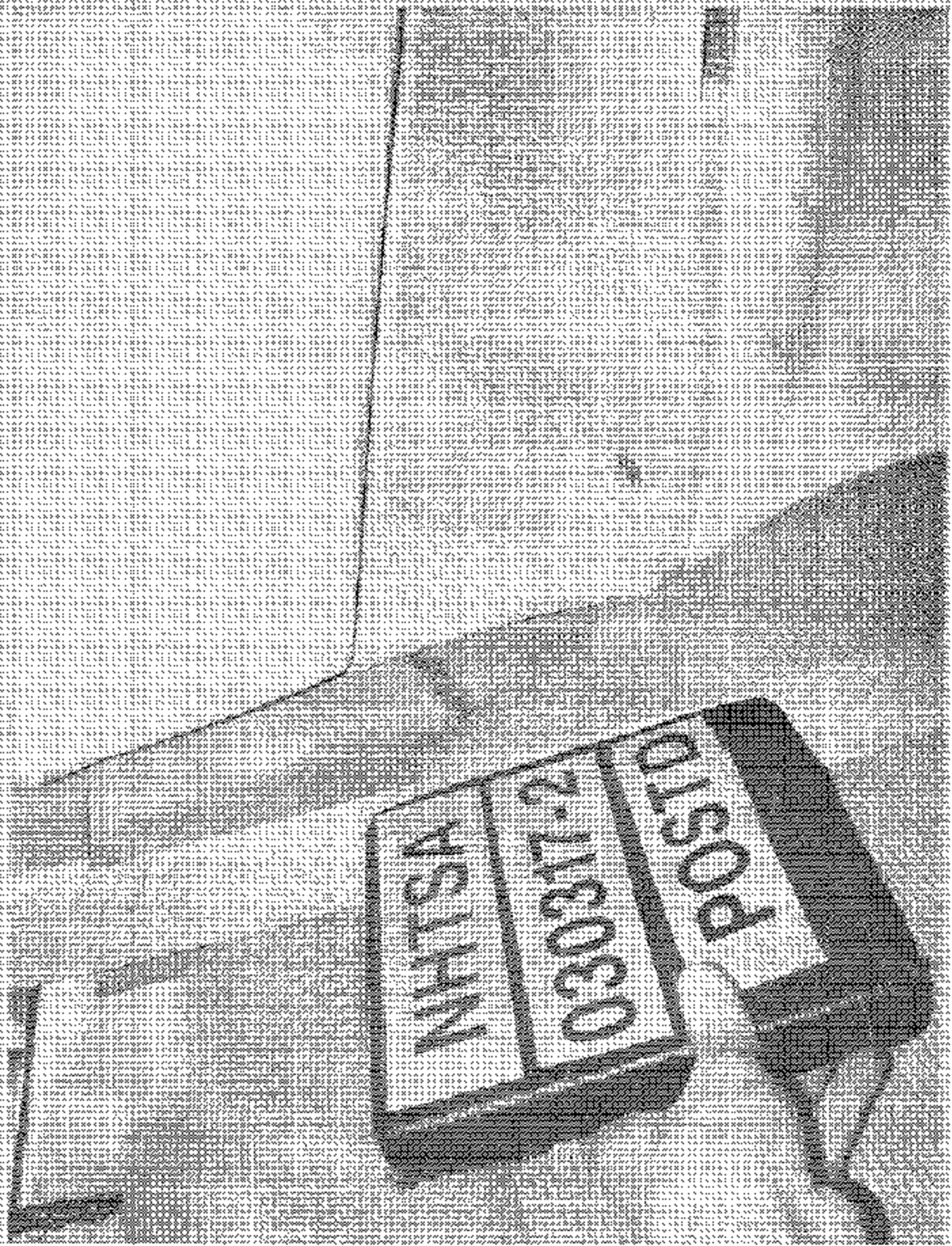


Figure A-36. Post-Test Front STD Container—View 3

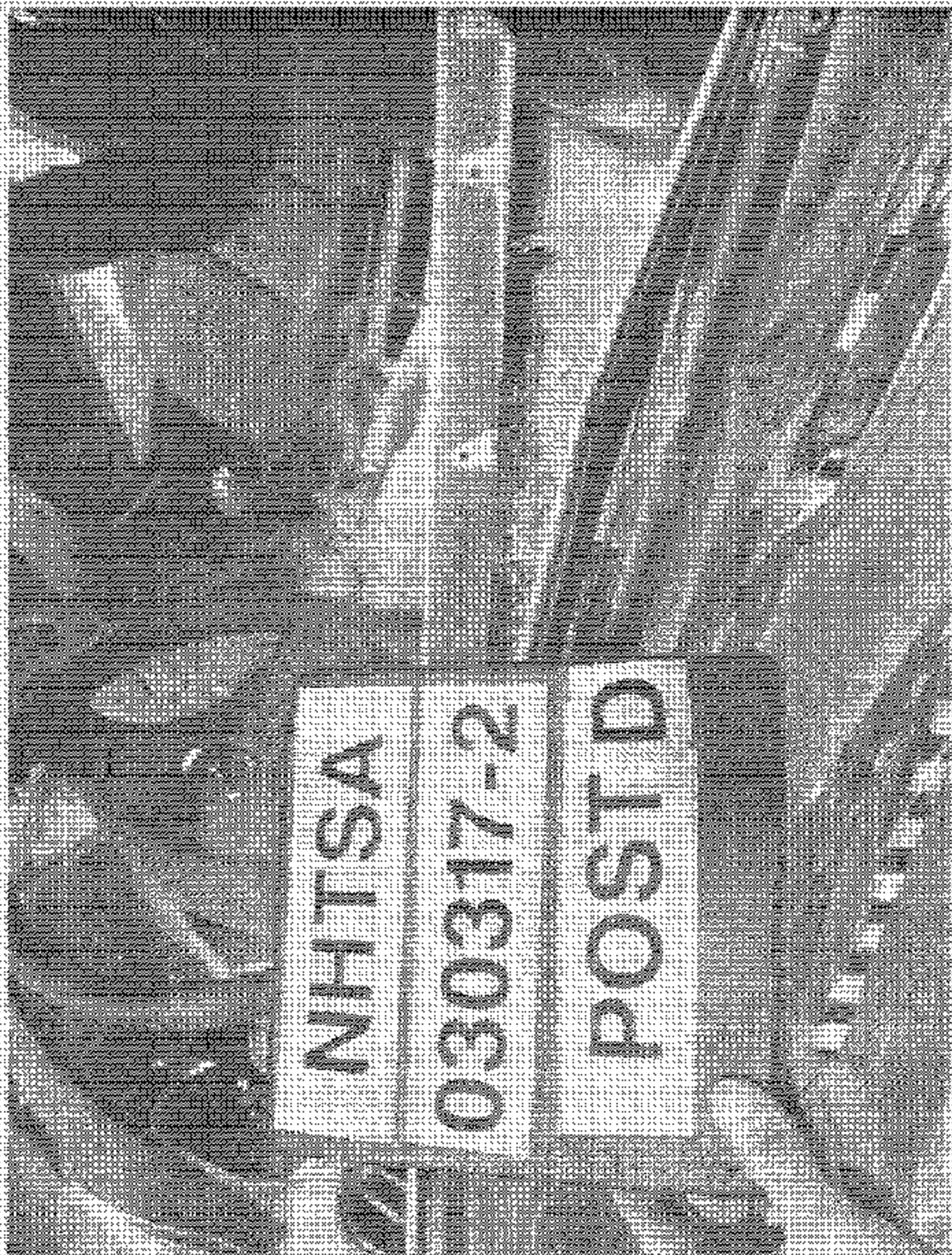


Figure A-37. Post-Test Front SLD Control—View 4

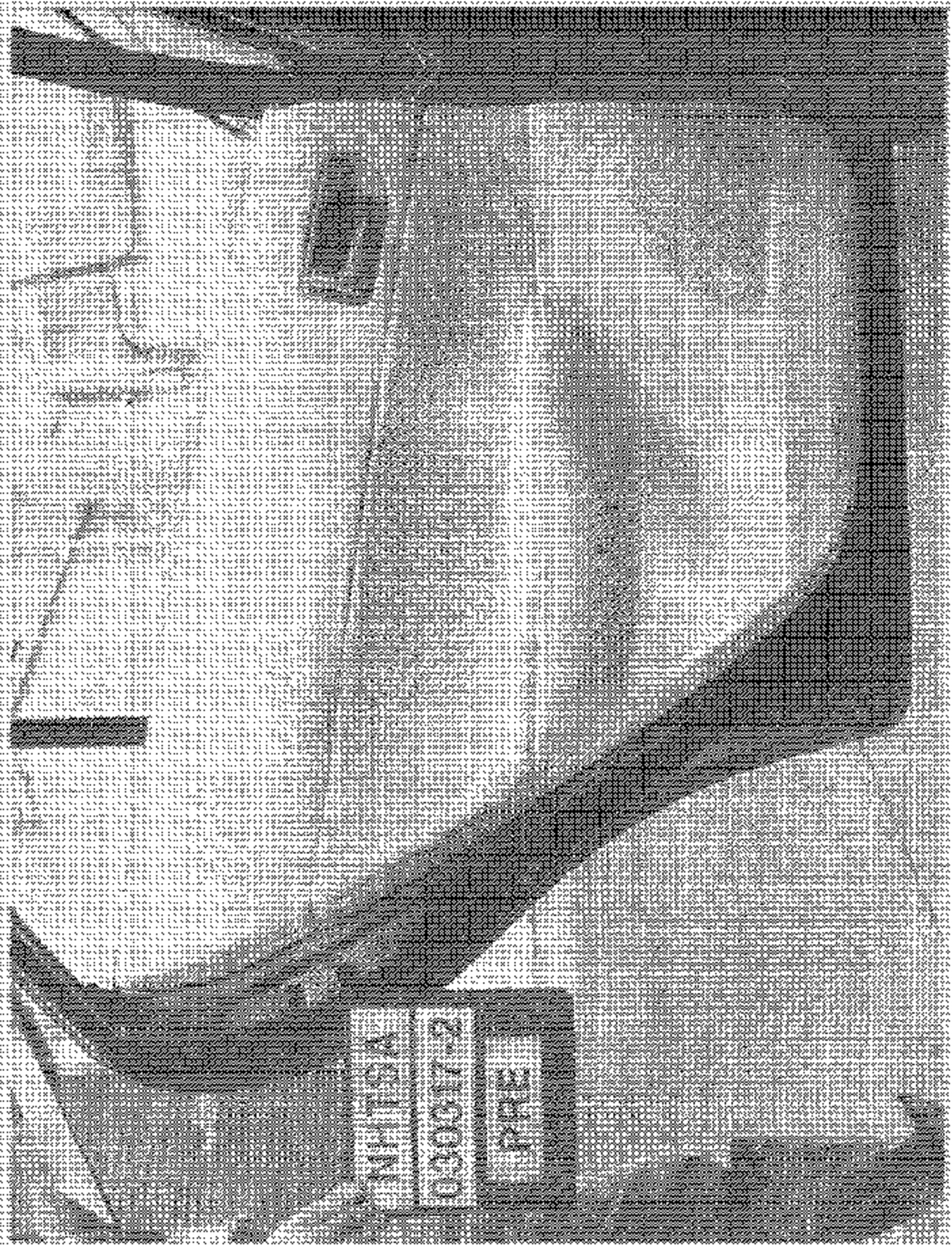


Figure A-38 Pre-Test Interior of Rear Door



Figure A-39. Post-Test Interior of Rear Door Showing SBD Impact Locations

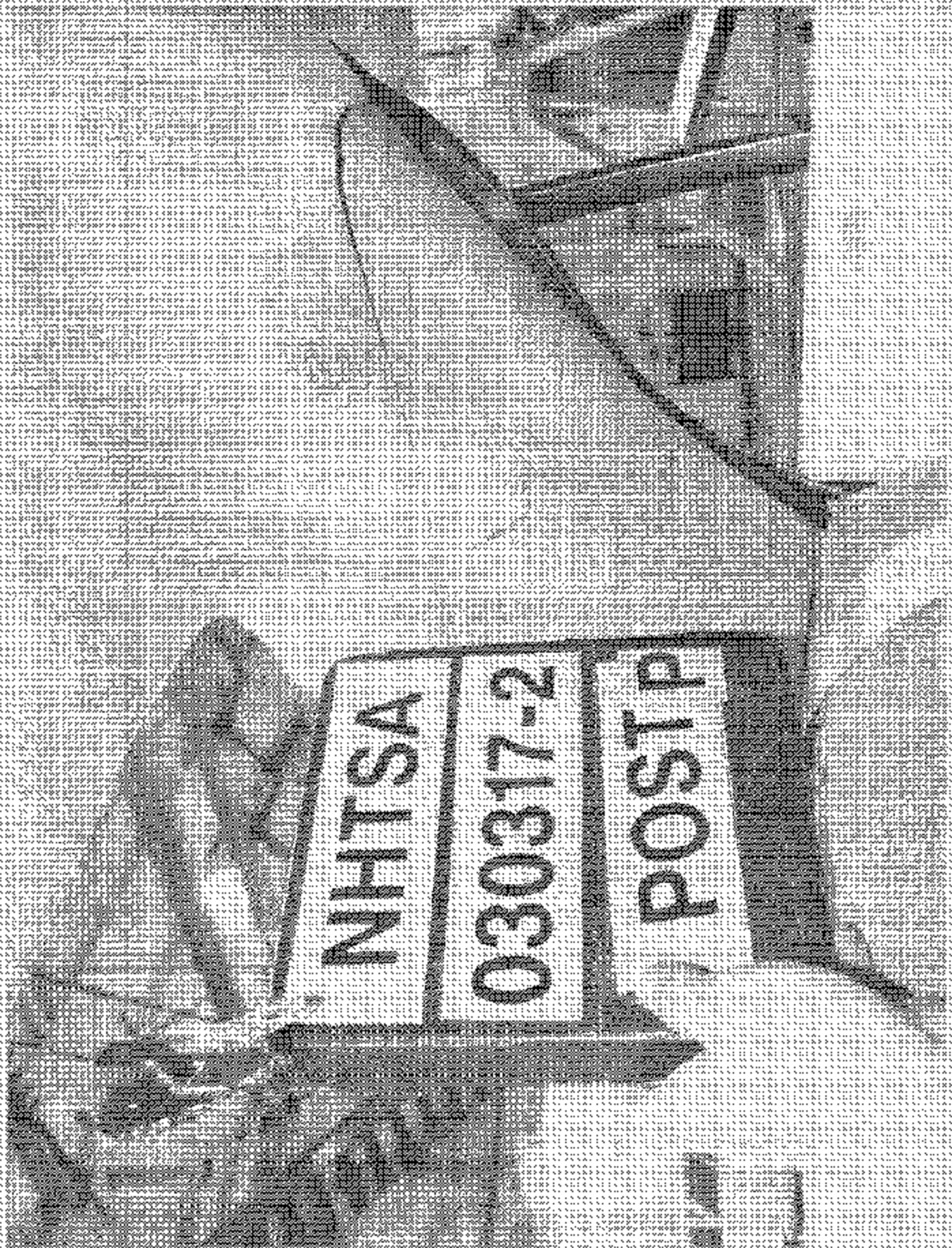


Figure A-40 Post-Test Rear SID Contact - View 1

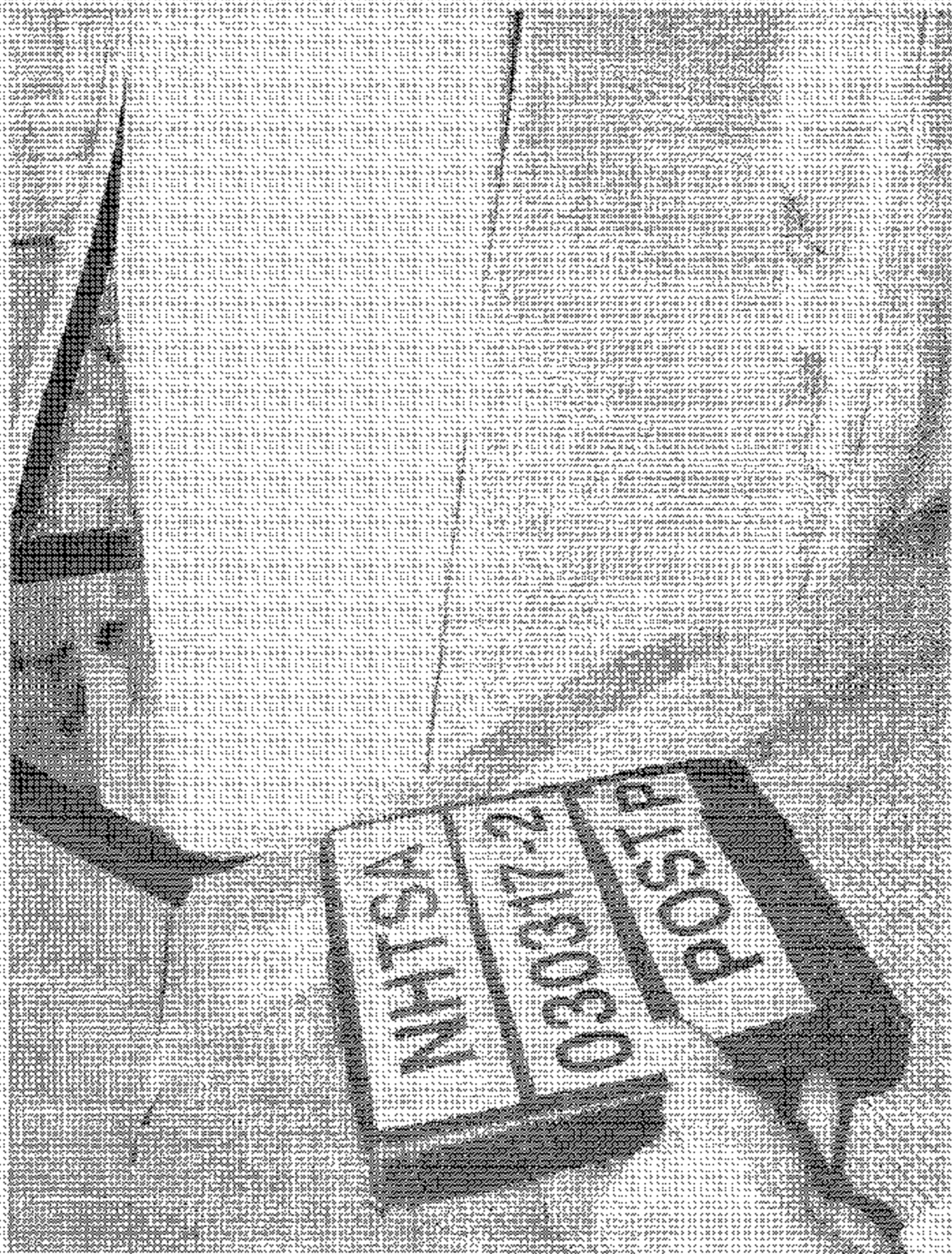


Figure A-41 Post-Test Rear SID Contact - View 2



Figure A-42 Post-Test Rear SBD Contact - View 3



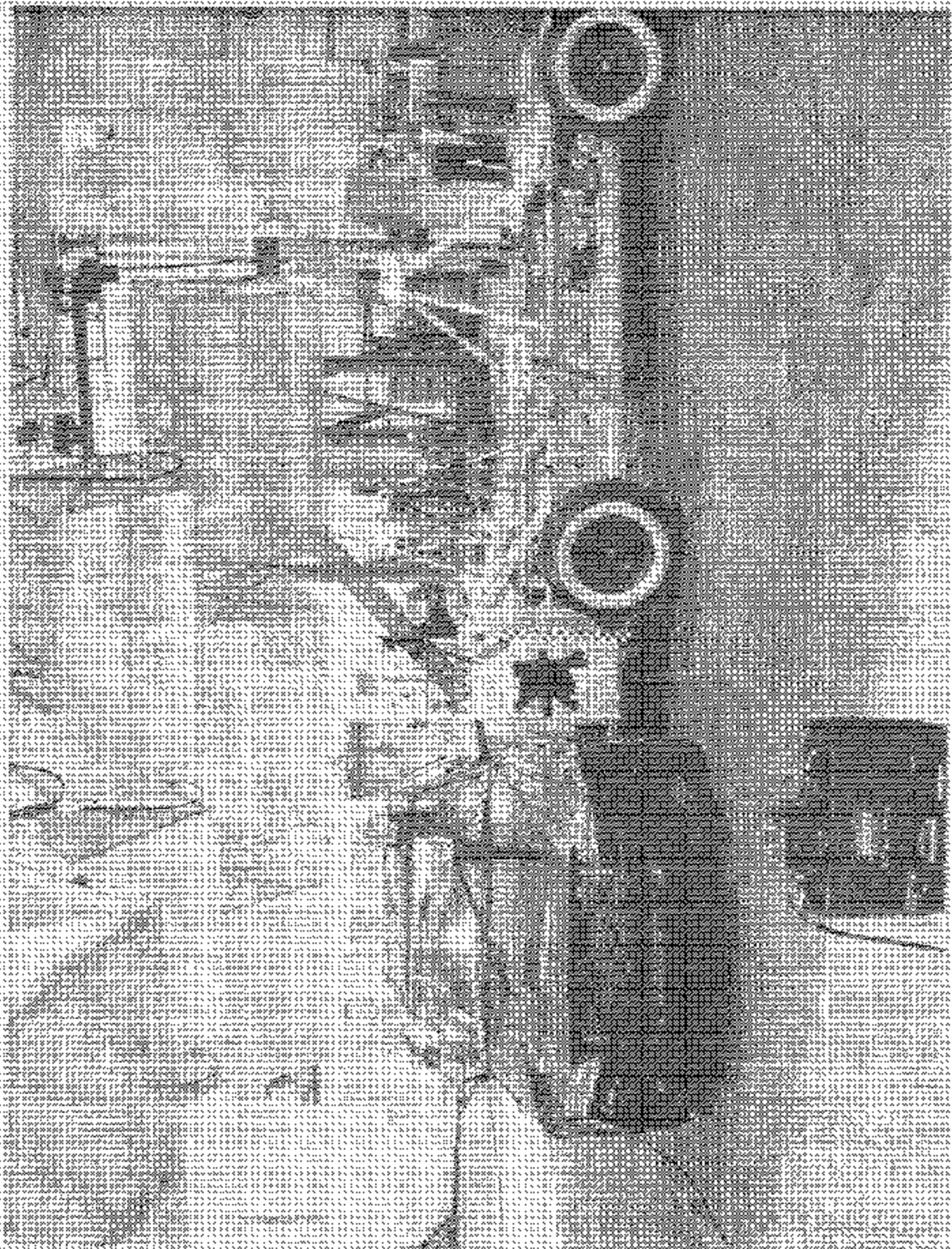


Figure A-43 Pre-Test Left Side View of MDB With Impactor Face in Position



Figure A-44 Pre-Test Primary Impact Point View



Figure A-45 Post-Test Primary Impact Point View

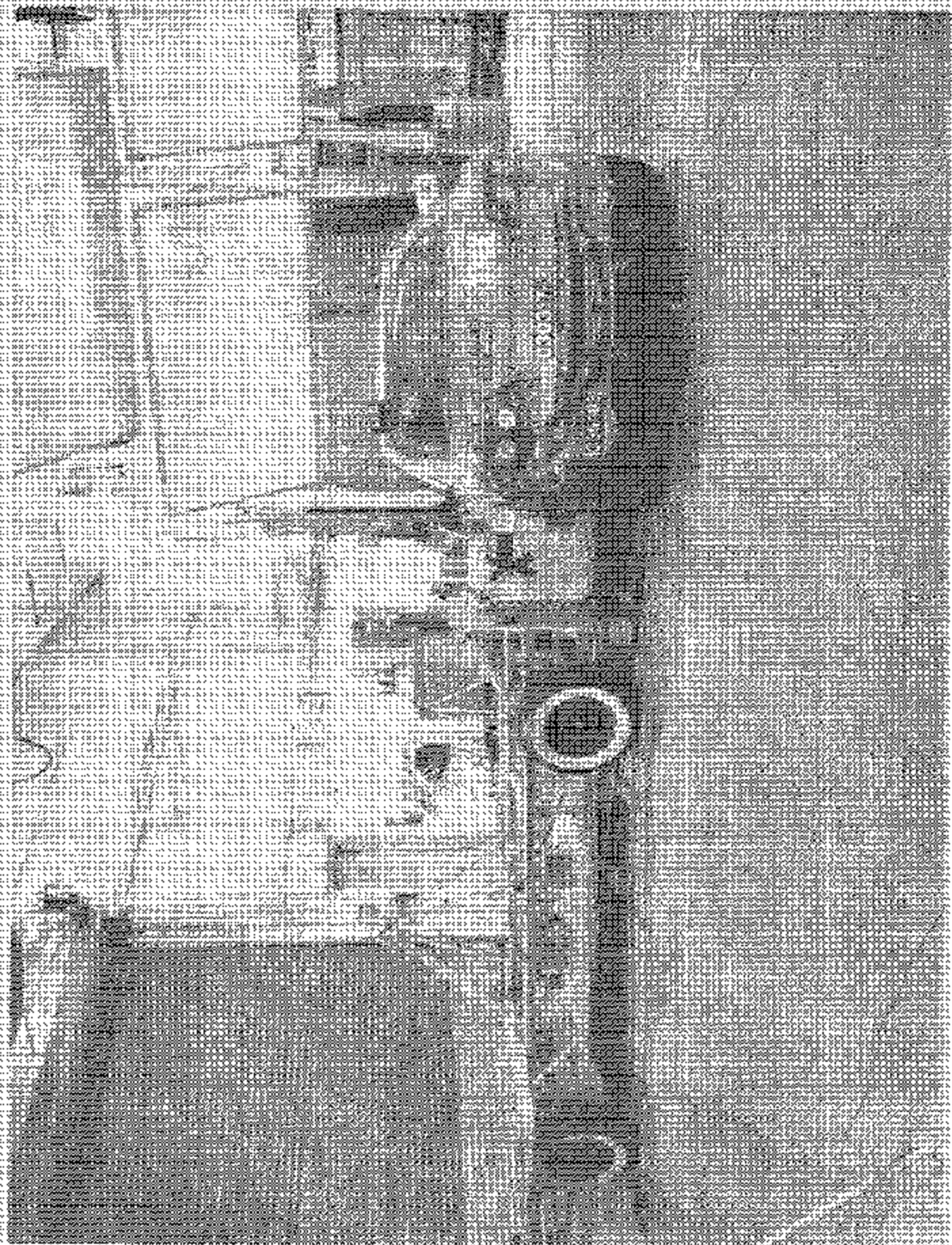


Figure A-40 Pre-Test Right Side View of MD8 With Impactor Face in Position



Figure A-47. Pre-Test Secondary Impact Point View

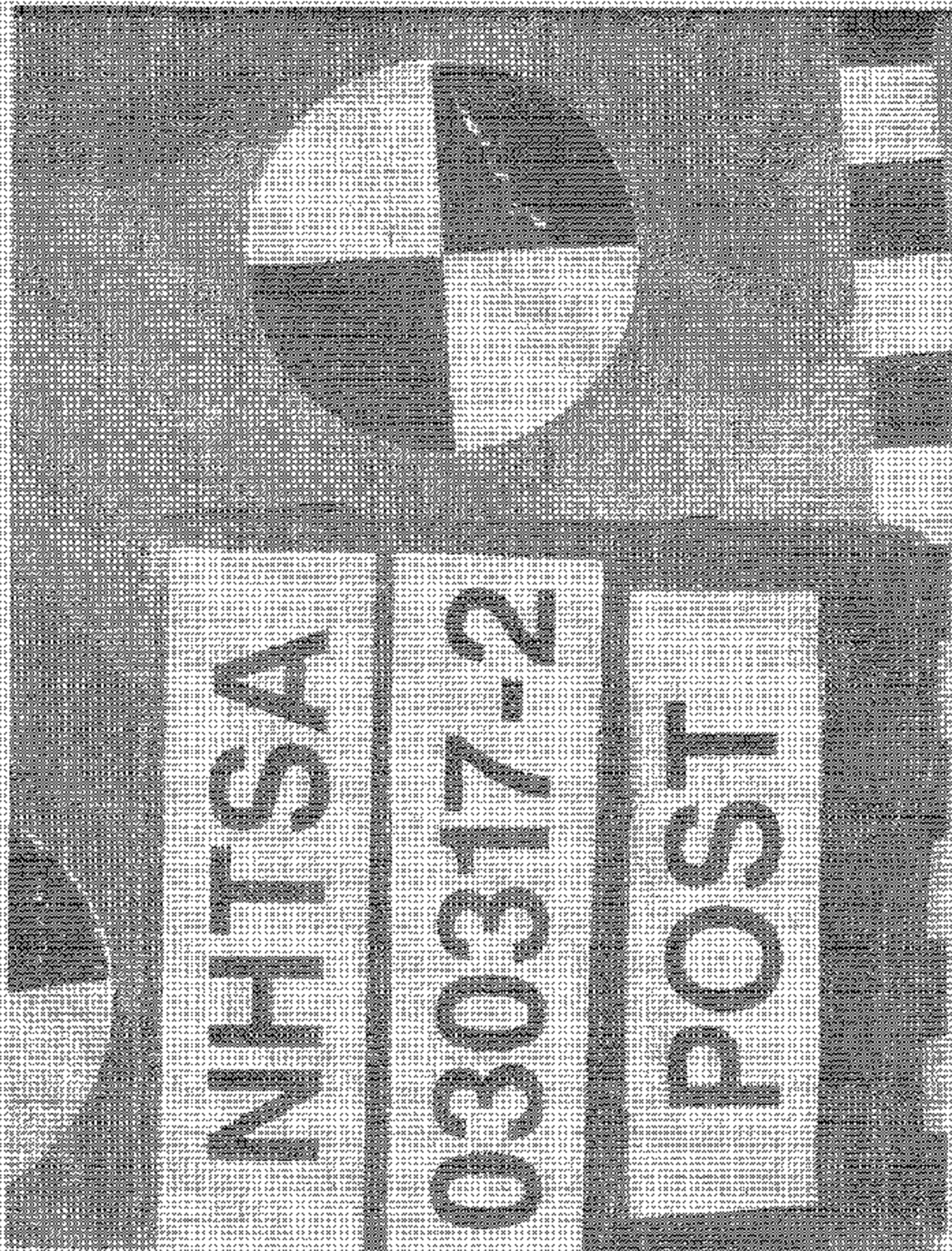
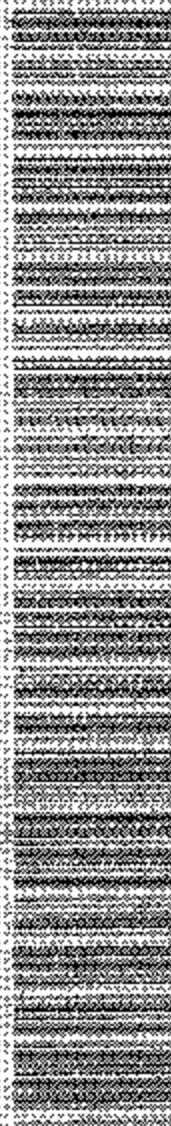


Figure A-48 Post-Test Secondary Impact Point View

**Figure 1**

THIS FREE OFFERING IS ALL YOU CAN GET FROM YOUR FAVORITE SUGAR BAKER AND THE FINEST INGREDIENTS. WE'VE GOT TO HAVE A HUNDRED SUGAR BAKES

1-800-932-7933

[illegible]

**Figure 1**

**Figure 1**

Figure A-42: Pre-Test Vehicle Certification Label View





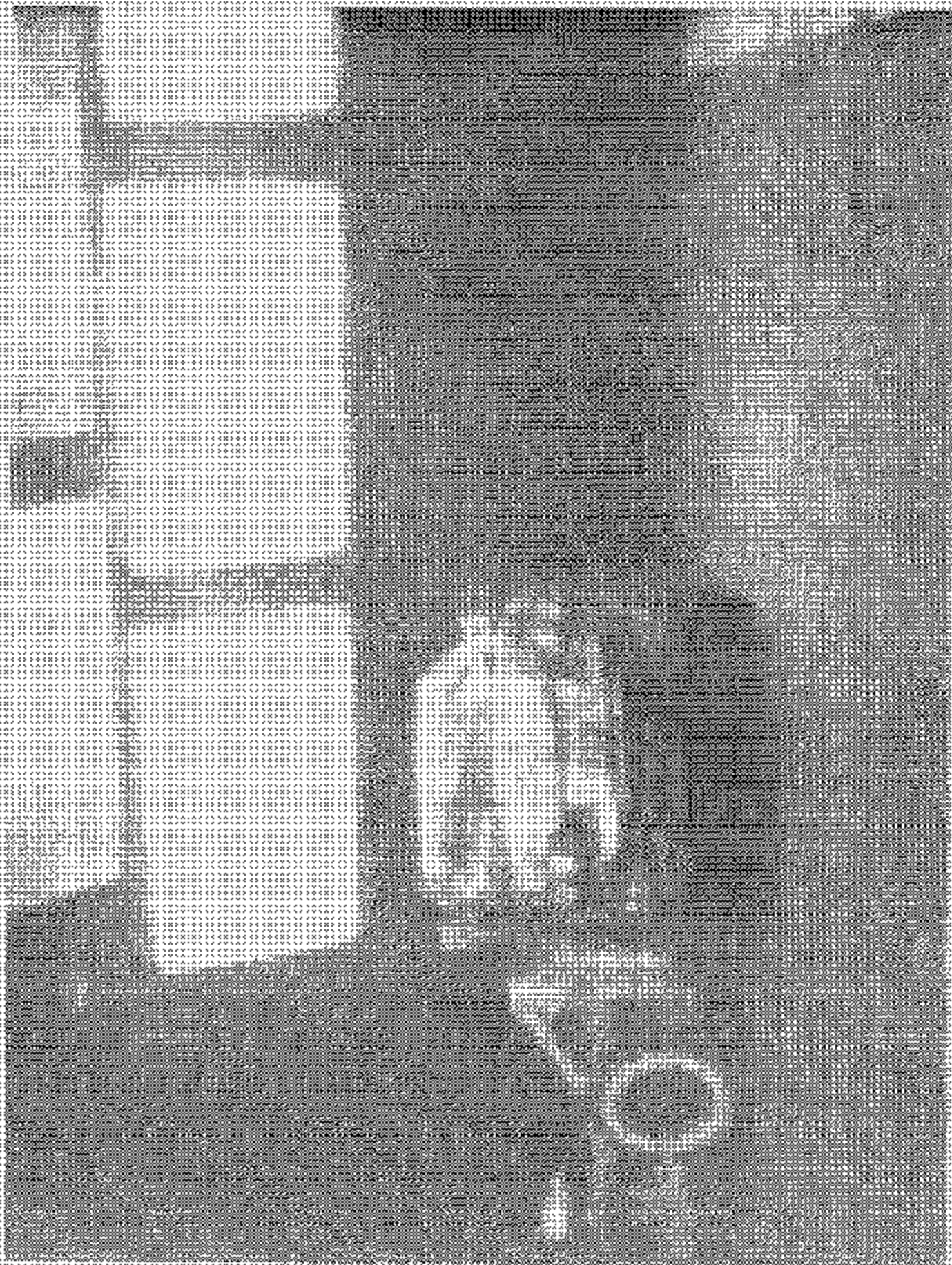


Figure A-51 Impact Burn

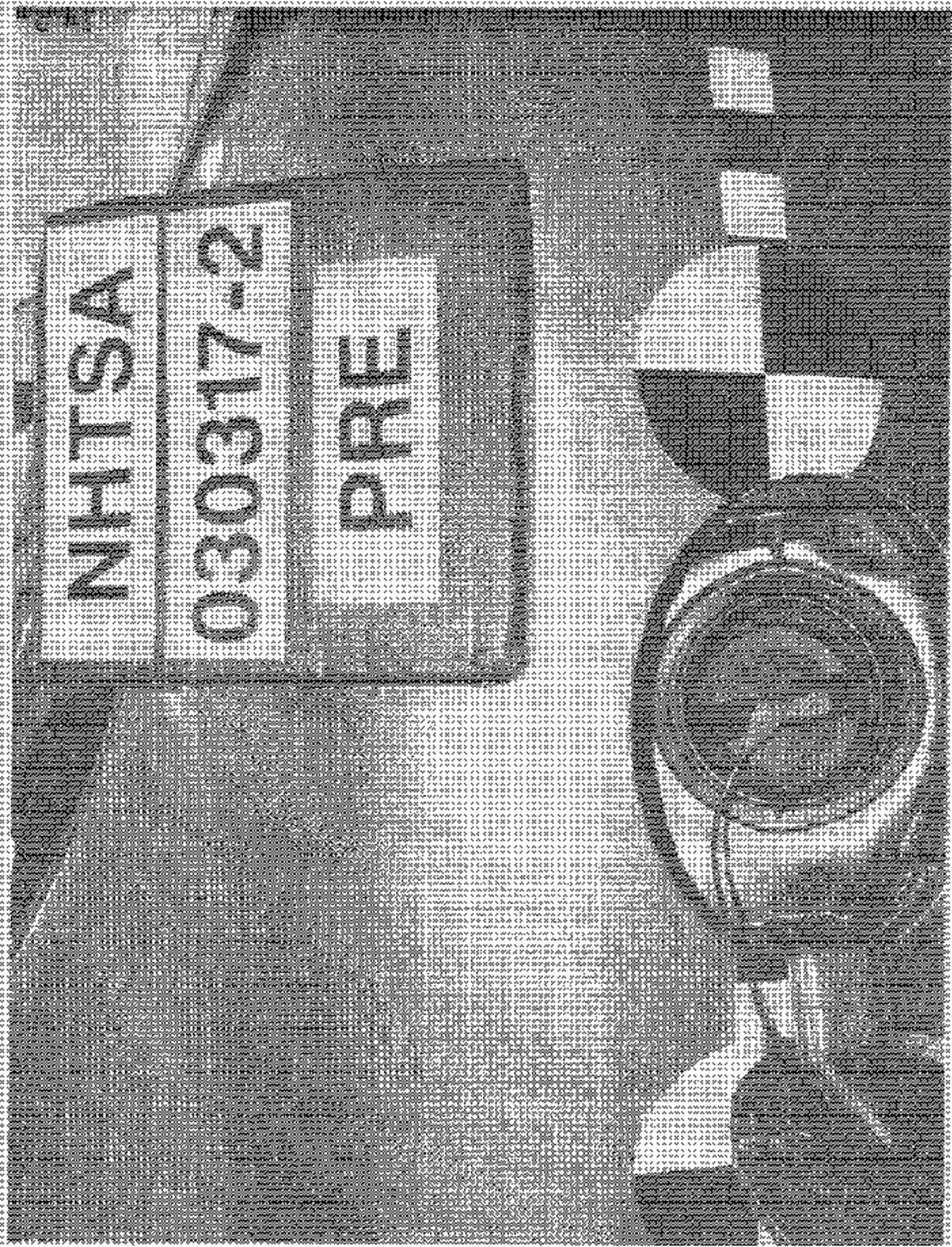


Figure A-52. Pre-Test Fuel Cap

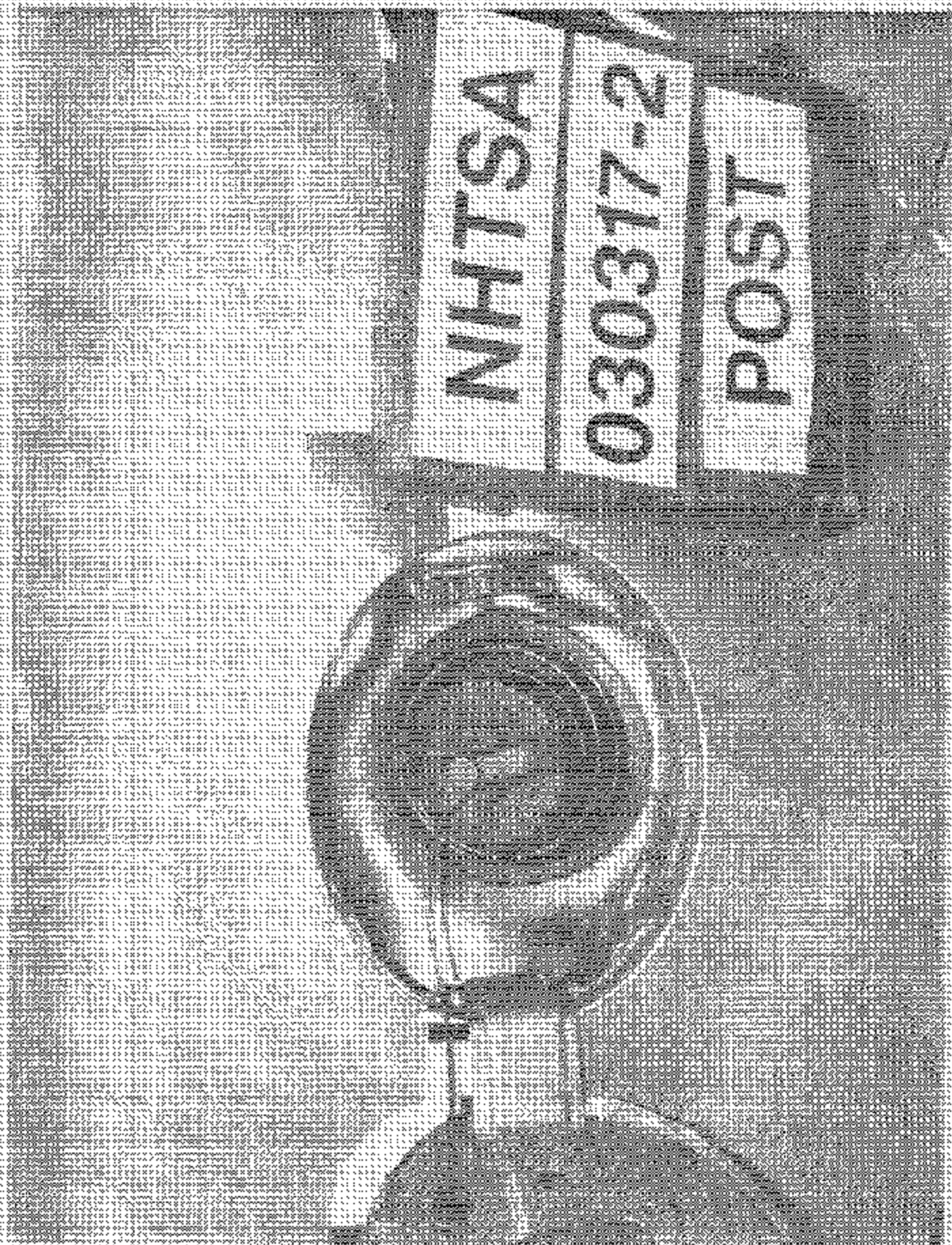


Figure A-53 Post-Test Fuel Cap

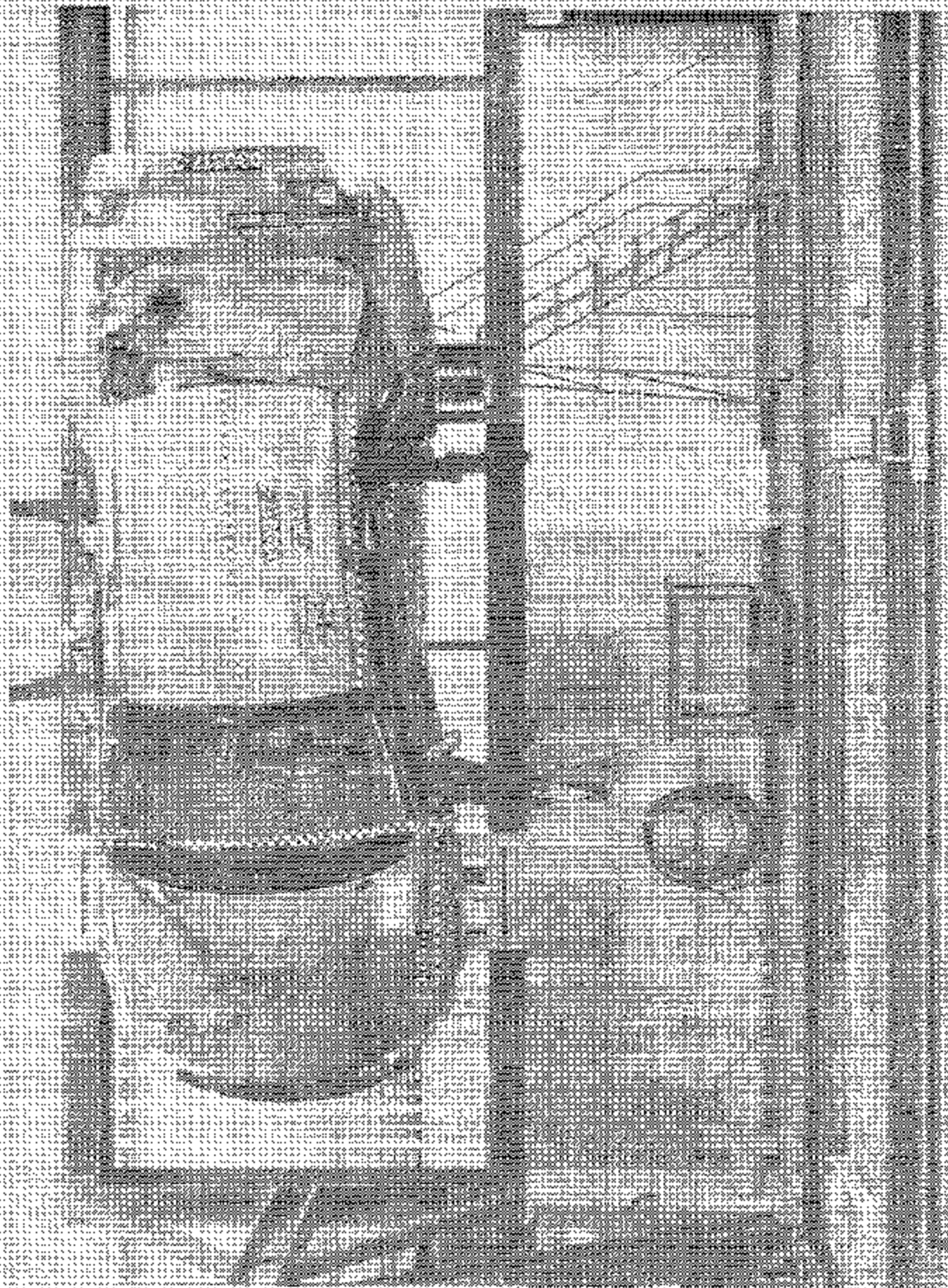


Figure A-54 PMVSS 301 Roll-over View at 90°

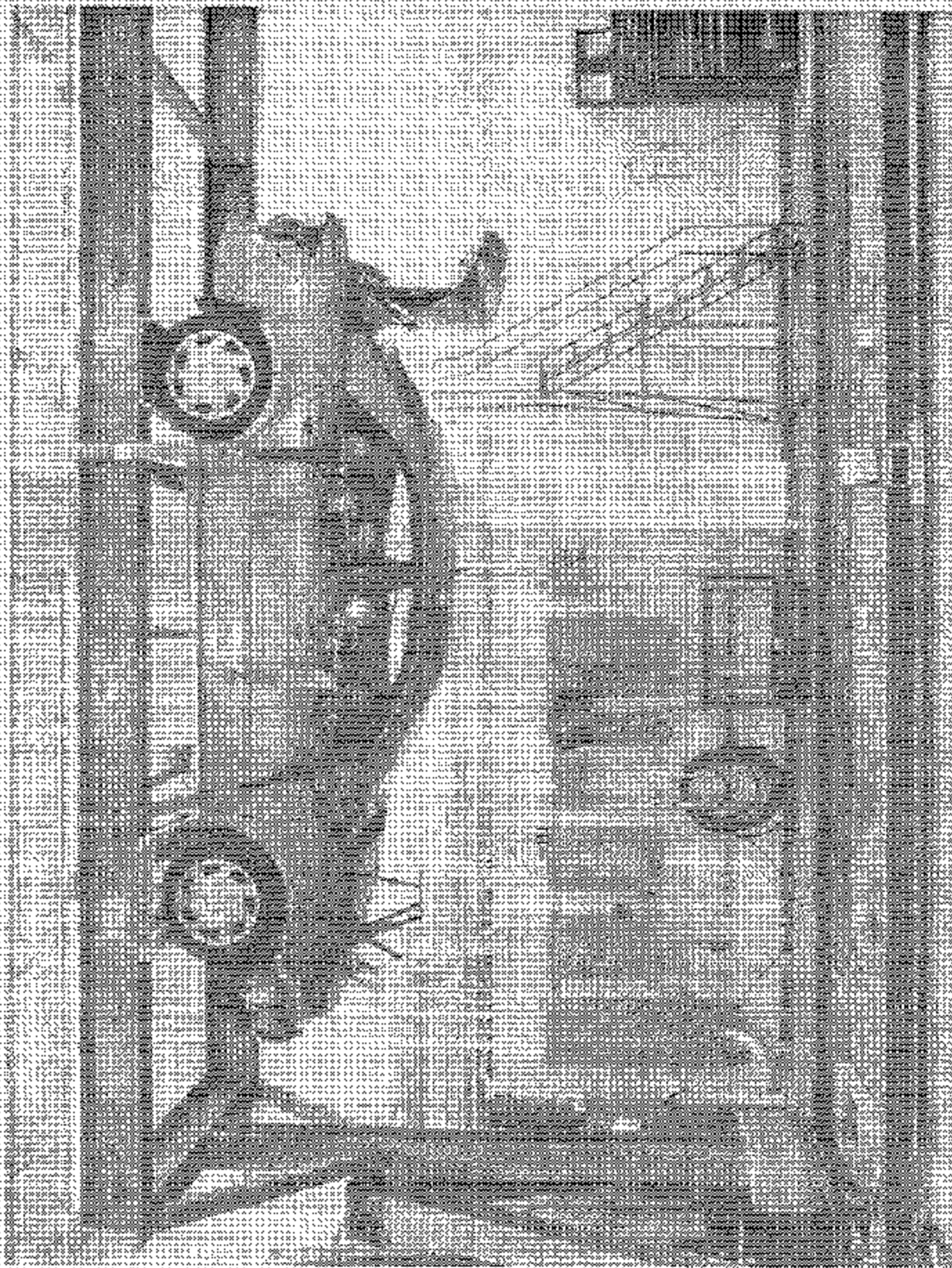


Figure A-55 FMVSS 301 Rollover View at 180°

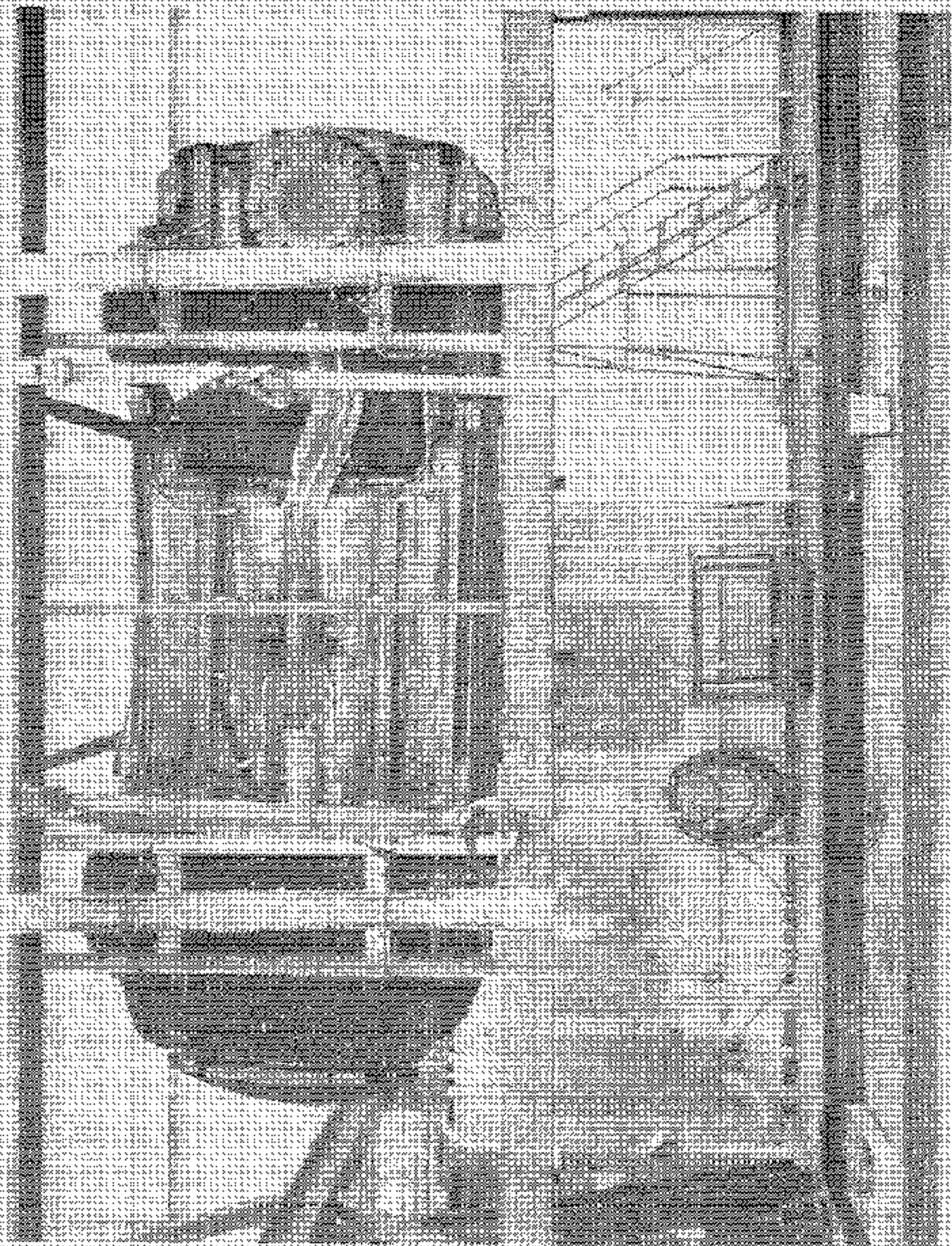


Figure A-56 FMVSS 301 Rollover View at 270°

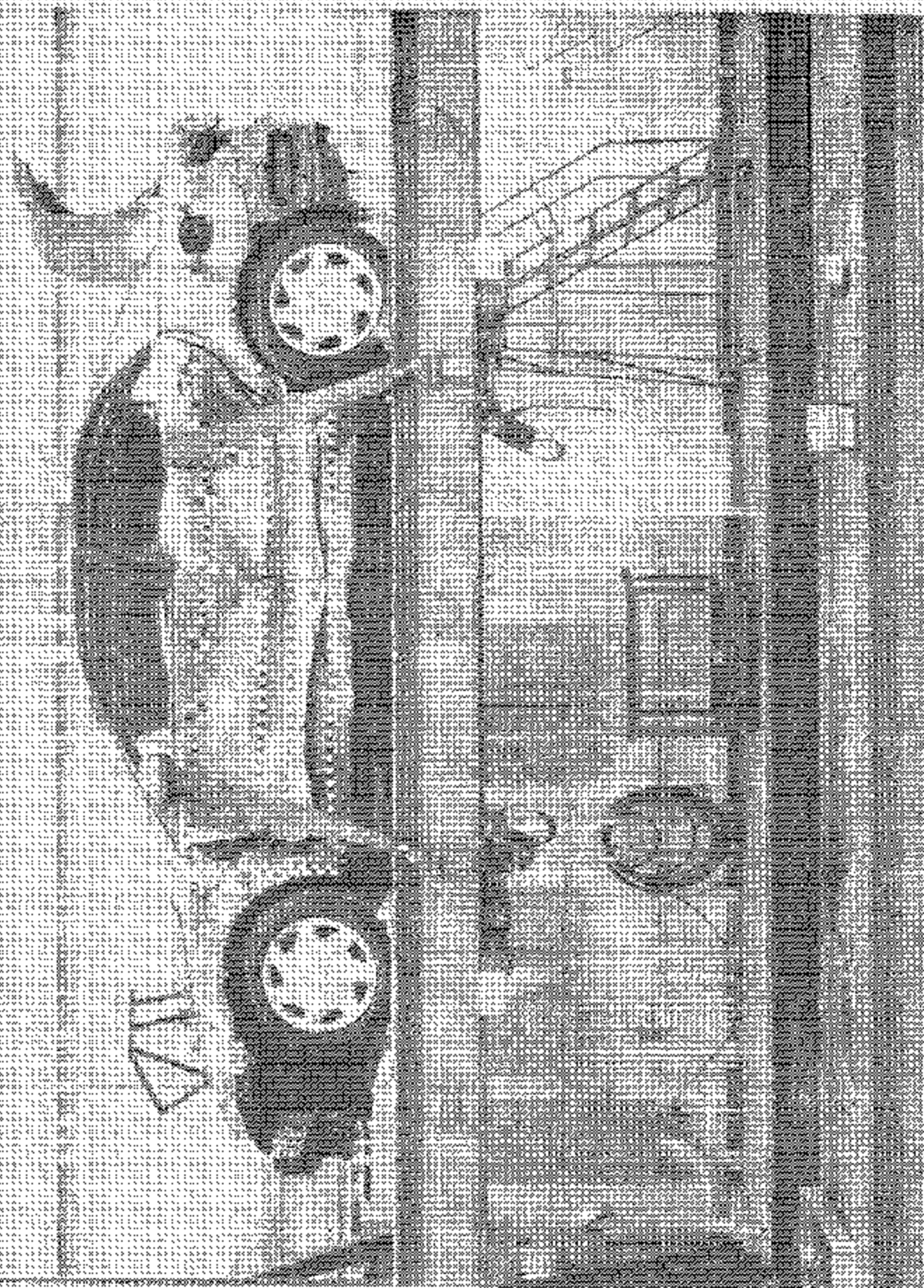


Figure A-57 PMV 98 301 Roll-over View at 360°

## Appendix B

### Data Plots



Table of Data Plots

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

Contact Data - Filter Class 1000

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	Driver Head X-Axis Acceleration	B-10
2	Driver Head X-Axis Velocity	B-11
3	Driver Head Y-Axis Acceleration	B-12
4	Driver Head Y-Axis Velocity	B-13
5	Driver Head Z-Axis Acceleration	B-14
6	Driver Head Z-Axis Velocity	B-15
7	Driver Head Resultant Acceleration	B-16
8	Driver Neck X-Axis Shear Force	B-17
9	Driver Neck Y-Axis Shear Force	B-18
10	Driver Neck Z-Axis Axial Force	B-19
11	Driver Neck Moment about X Axis	B-20
12	Driver Neck Moment about Y Axis	B-21
13	Driver Neck Moment about Z Axis	B-22
14	Driver Neck Occipital Condyle Moment about X Axis	B-23
15	Driver Upper Rib Y-Axis Acceleration	B-24
16	Driver Upper Rib Y-Axis Velocity	B-25
17	Driver Lower Rib Y-Axis Acceleration	B-26
18	Driver Lower Rib Y-Axis Velocity	B-27
19	Driver Lower Spine Y-Axis Acceleration	B-28
20	Driver Lower Spine Y-Axis Velocity	B-29
21	Driver Pelvis Y-Axis Acceleration	B-30
22	Driver Pelvis Y-Axis Velocity	B-31
23	Left Rear Passenger Head X-Axis Acceleration	B-32
24	Left Rear Passenger Head X-Axis Velocity	B-33
25	Left Rear Passenger Head Y-Axis Acceleration	B-34
26	Left Rear Passenger Head Y-Axis Velocity	B-35
27	Left Rear Passenger Head Z-Axis Acceleration	B-36

Table of Data Plots (Continued)

Driver and Passenger Dummy Instrumentation Plots (Continued)

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

Contact Data - Filter Class 1000

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
28	Left Rear Passenger Head Z-Axis Velocity	B-37
29	Left Rear Passenger Head Resultant Acceleration	B-38
30	Left Rear Passenger Neck X-Axis Shear Force	B-39
31	Left Rear Passenger Neck Y-Axis Shear Force	B-40
32	Left Rear Passenger Neck Z-Axis Axial Force	B-41
33	Left Rear Passenger Neck Moment about X Axis	B-42
34	Left Rear Passenger Neck Moment about Y Axis	B-43
35	Left Rear Passenger Neck Moment about Z Axis	B-44
36	Left Rear Passenger Neck Occipital Condyle Moment about X Axis	B-45
37	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-46
38	Left Rear Passenger Upper Rib Y-Axis Velocity	B-47
39	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-48
40	Left Rear Passenger Lower Rib Y-Axis Velocity	B-49
41	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-50
42	Left Rear Passenger Lower Spine Y-Axis Velocity	B-51
43	Left Rear Passenger Pelvis Y-Axis Acceleration	B-52
44	Left Rear Passenger Pelvis Y-Axis Velocity	B-53

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000 - Redundant

Integration Data - Filter Class 180 - Redundant

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
45	Driver Head X-Axis Redundant Acceleration	B-55
46	Driver Head X-Axis Redundant Velocity	B-56
47	Driver Head Y-Axis Redundant Acceleration	B-57
48	Driver Head Y-Axis Redundant Velocity	B-58

Table of Data Plots (Continued)

Driver and Passenger Dummy Instrumentation Plots (Continued)

Acceleration Data - Filter Class 1000 - Redundant

Integration Data - Filter Class 180 - Redundant

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
49	Driver Head Z-Axis Redundant Acceleration	B-59
50	Driver Head Z-Axis Redundant Velocity	B-60
51	Driver Upper Rib Y-Axis Redundant Acceleration	B-61
52	Driver Upper Rib Y-Axis Redundant Velocity	B-62
53	Driver Lower Rib Y-Axis Redundant Acceleration	B-63
54	Driver Lower Rib Y-Axis Redundant Velocity	B-64
55	Driver Lower Spine Y-Axis Redundant Acceleration	B-65
56	Driver Lower Spine Y-Axis Redundant Velocity	B-66
57	Driver Pelvis Y-Axis Redundant Acceleration	B-67
58	Driver Pelvis Y-Axis Redundant Velocity	B-68
59	Left Rear Passenger Head X-Axis Redundant Acceleration	B-69
60	Left Rear Passenger Head X-Axis Redundant Velocity	B-70
61	Left Rear Passenger Head Y-Axis Redundant Acceleration	B-71
62	Left Rear Passenger Head Y-Axis Redundant Velocity	B-72
63	Left Rear Passenger Head Z-Axis Redundant Acceleration	B-73
64	Left Rear Passenger Head Z-Axis Redundant Velocity	B-74
65	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-75
66	Left Rear Passenger Upper Rib Y-Axis Redundant Velocity	B-76
67	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-77
68	Left Rear Passenger Lower Rib Y-Axis Redundant Velocity	B-78
69	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-79
70	Left Rear Passenger Lower Spine Y-Axis Redundant Velocity	B-80
71	Left Rear Passenger Pelvis Y-Axis Redundant Acceleration	B-81
72	Left Rear Passenger Pelvis Y-Axis Redundant Velocity	B-82

Table of Data Plots (Continued)  
 Test Vehicle Instrumentation Plots  
 Acceleration Data - Filter Class 60  
 Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
73	Right Side Sill at Front Seat X-Axis Acceleration	B-84
74	Right Side Sill at Front Seat X-Axis Velocity	B-85
75	Right Side Sill at Front Seat Y-Axis Acceleration	B-86
76	Right Side Sill at Front Seat Y-Axis Velocity	B-87
77	Right Side Sill at Front Seat Z-Axis Acceleration	B-88
78	Right Side Sill at Front Seat Z-Axis Velocity	B-89
79	Right Side Sill at Front Seat Resultant Acceleration	B-90
80	Right Side Sill at Rear Seat X-Axis Acceleration	B-91
81	Right Side Sill at Rear Seat X-Axis Velocity	B-92
82	Right Side Sill at Rear Seat Y-Axis Acceleration	B-93
83	Right Side Sill at Rear Seat Y-Axis Velocity	B-94
84	Right Side Sill at Rear Seat Z-Axis Acceleration	B-95
85	Right Side Sill at Rear Seat Z-Axis Velocity	B-96
86	Right Side Sill at Rear Seat Resultant Acceleration	B-97
87	Rear Floorpan Above Axle X-Axis Acceleration	B-98
88	Rear Floorpan Above Axle X-Axis Velocity	B-99
89	Rear Floorpan Above Axle Y-Axis Acceleration	B-100
90	Rear Floorpan Above Axle Y-Axis Velocity	B-101
91	Rear Floorpan Above Axle Z-Axis Acceleration	B-102
92	Rear Floorpan Above Axle Z-Axis Velocity	B-103
93	Rear Floorpan Above Axle Resultant Acceleration	B-104
94	Left Side Sill at Front Seat Y-Axis Acceleration	B-105
95	Left Side Sill at Front Seat Y-Axis Velocity	B-106
96	Left Side Sill at Front Seat Y-Axis Displacement	B-107
97	Left Side Sill at Rear Seat Y-Axis Acceleration	B-108
98	Left Side Sill at Rear Seat Y-Axis Velocity	B-109
99	Left Side Sill at Rear Seat Y-Axis Displacement	B-110
100	Left Front Door on Centerline Y-Axis Acceleration	B-111
101	Left Front Door on Centerline Y-Axis Velocity	B-112

Table of Data Plots (Continued)  
 Test Vehicle Instrumentation Plots (Continued)  
 Acceleration Data - Filter Class 60  
 Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
102	Left Front Door on Centerline Y-Axis Displacement	B-113
103	Right Rear Occupant Compartment Y Axis Acceleration	B-114
104	Right Rear Occupant Compartment Y Axis Velocity	B-115
105	Right Rear Occupant Compartment Y Axis Displacement	B-116
106	Left Front Door Mid-Rear Y-Axis Acceleration	B-117
107	Left Front Door Mid-Rear Y-Axis Velocity	B-118
108	Left Front Door Mid-Rear Y-Axis Displacement	B-119
109	Left Front Door Upper Centerline Y-Axis Acceleration	B-120
110	Left Front Door Upper Centerline Y-Axis Velocity	B-121
111	Left Front Door Upper Centerline Y-Axis Displacement	B-122
112	Left Rear Door Mid-Rear Y-Axis Acceleration	B-123
113	Left Rear Door Mid-Rear Y-Axis Velocity	B-124
114	Left Rear Door Mid-Rear Y-Axis Displacement	B-125
115	Left Rear Door Upper Centerline Y-Axis Acceleration	B-126
116	Left Rear Door Upper Centerline Y-Axis Velocity	B-127
117	Left Rear Door Upper Centerline Y-Axis Displacement	B-128
118	Left Lower A-Post Y-Axis Acceleration	B-129
119	Left Lower A-Post Y-Axis Velocity	B-130
120	Left Middle A-Post Y-Axis Acceleration	B-131
121	Left Middle A-Post Y-Axis Velocity	B-132
122	Left Lower B-Post Y-Axis Acceleration	B-133
123	Left Lower B-Post Y-Axis Velocity	B-134
124	Left Middle B-Post Y-Axis Acceleration	B-135
125	Left Middle B-Post Y-Axis Velocity	B-136
126	Left Front Seat Track Y-Axis Acceleration	B-137
127	Left Front Seat Track Y-Axis Velocity	B-138
128	Left Rear Seat Track Y-Axis Acceleration	B-139
129	Left Rear Seat Track Y-Axis Velocity	B-140
130	Vehicle Center of Gravity X-Axis Acceleration	B-141

Table of Data Plots (Continued)

Test Vehicle Instrumentation Plots (Continued)

Acceleration Data - Filter Class 60

Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
131	Vehicle Center of Gravity X-Axis Velocity	B-142
132	Vehicle Center of Gravity Y-Axis Acceleration	B-143
133	Vehicle Center of Gravity Y-Axis Velocity	B-144
134	Vehicle Center of Gravity Z-Axis Acceleration	B-145
135	Vehicle Center of Gravity Z-Axis Velocity	B-146
136	Vehicle Center of Gravity Resultant Acceleration	B-147

MDB Instrumentation Plots

Acceleration Data - Filter Class 60

Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
137	MDB Center of Gravity X-Axis Acceleration	B-149
138	MDB Center of Gravity X-Axis Velocity	B-150
139	MDB Center of Gravity Y-Axis Acceleration	B-151
140	MDB Center of Gravity Y-Axis Velocity	B-152
141	MDB Center of Gravity Z-Axis Acceleration	B-153
142	MDB Center of Gravity Z-Axis Velocity	B-154
143	MDB Center of Gravity Resultant Acceleration	B-155
144	MDB Left Rear X-Axis Acceleration	B-156
145	MDB Left Rear X-Axis Velocity	B-157
146	MDB Left Rear Y-Axis Acceleration	B-158
147	MDB Left Rear Y-Axis Velocity	B-159
148	MDB Right Side Contact Switch	B-160
149	MDB Left Side Contact Switch	B-161

Table of Data Plots (Continued)

Driver and Passenger Dummy Instrumentation Plots  
Acceleration Data - FIR Filtered

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
150	Driver Upper Rib Y-Axis Acceleration	B-163
151	Driver Lower Rib Y-Axis Acceleration	B-164
152	Driver Lower Spine Y-Axis Acceleration	B-165
153	Driver Pelvis Y-Axis Acceleration	B-166
154	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-167
155	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-168
156	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-169
157	Left Rear Passenger Pelvis Y-Axis Acceleration	B-170

Driver and Passenger Dummy Instrumentation Plots  
Acceleration Data - FIR Filtered - Redundant

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
158	Driver Upper Rib Y-Axis Redundant Acceleration	B-172
159	Driver Lower Rib Y-Axis Redundant Acceleration	B-173
160	Driver Lower Spine Y-Axis Redundant Acceleration	B-174
161	Driver Pelvis Y-Axis Redundant Acceleration	B-175
162	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-176
163	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-177
164	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-178
165	Left Rear Passenger Pelvis Y-Axis Redundant Acceleration	B-179

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

Contact Data - Filter Class 1000



55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER HEAD X-AXIS ACCELERATION

SVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2

TRC INC.

90

3

ACCELERATION (G X 10<sup>-1</sup>)

-84

-171

-258

-345

-432

TIME (MS)

310

280

250

220

190

160

130

100

70

40

10

-20

CHANNEL HEDXC1 FILTER CH CLASS 1000

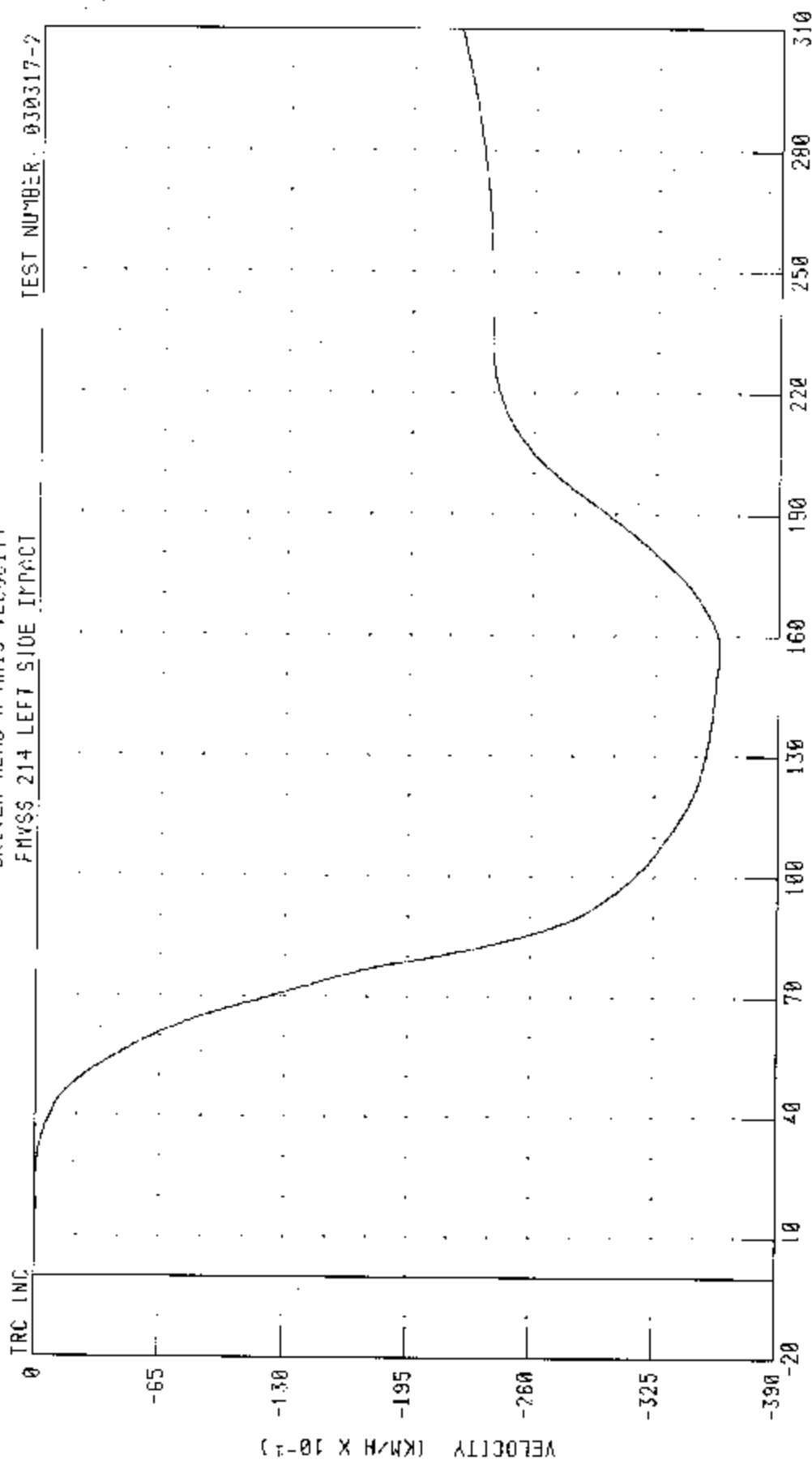
PEAK DATA 8.20 G @ 192.32 MS, -39.33 G @ 78.32 MS

55/23 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 20W3 MAZDA 6

DRIVER HEAD X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2



PEAK DATA 0 00 KM/H @ 1 84 MS, -35.89 KM/H @ 156 16 MS

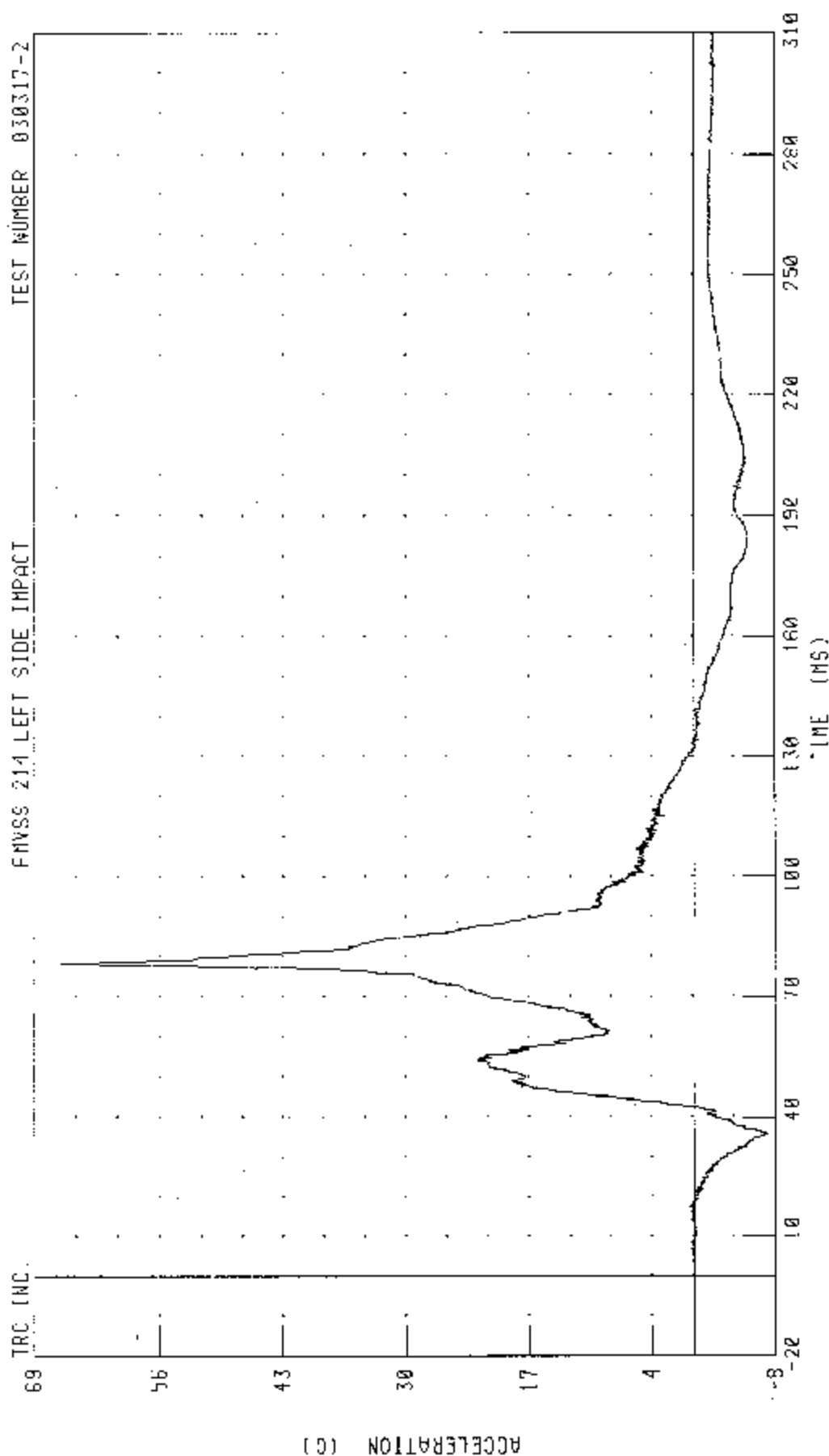
CHANNEL: HEDXV1 FILTER: CH. CLASS 180

55/28 KPH 50 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER HEAD Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2



CHANNEL HEDYG1 FILTER: CH. CLASS 1000

PEAK DATA 66 85 C @ 78 40 MS; -7 77 C @ 35 84 MS

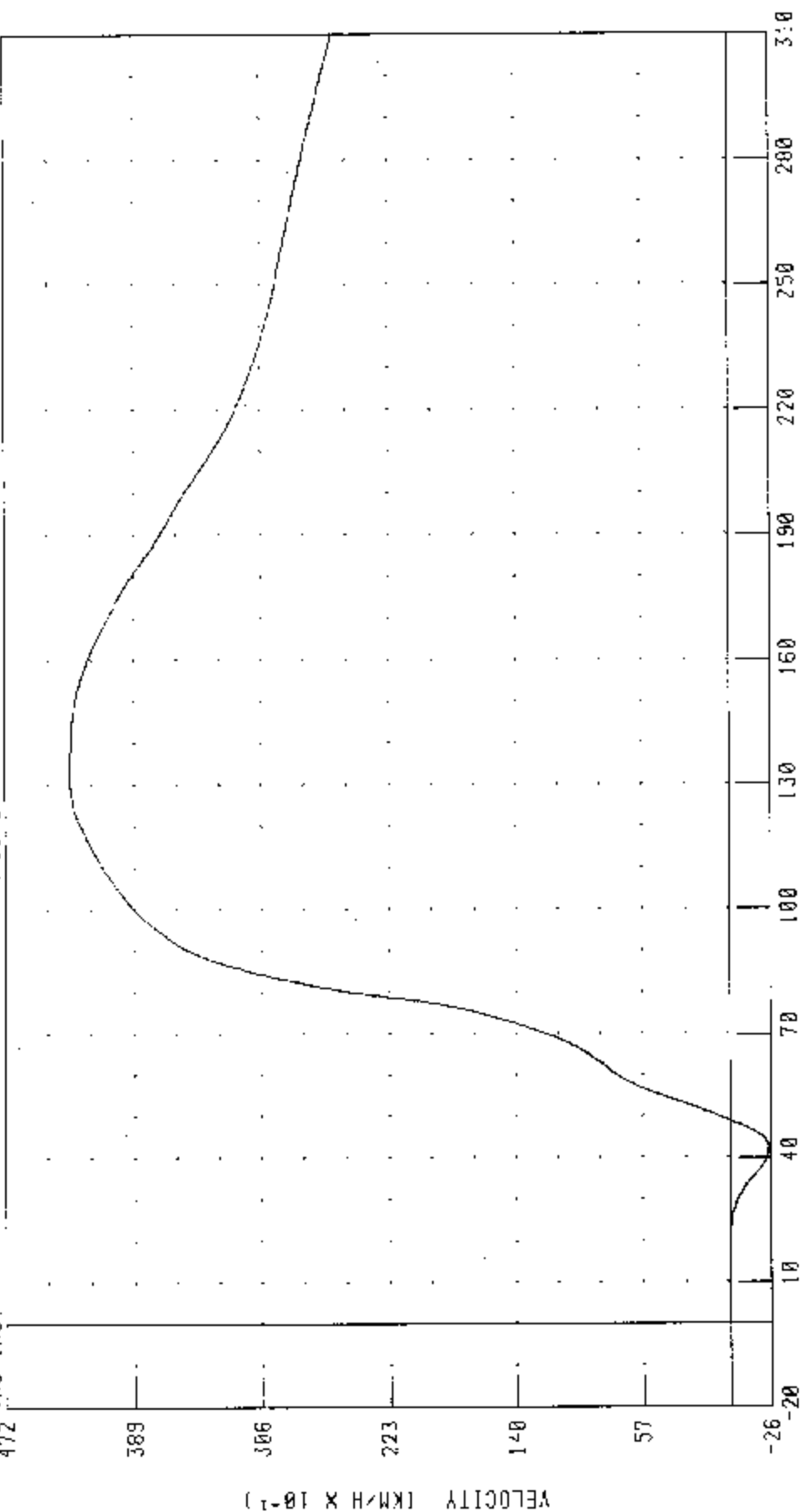
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER HEAD Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: US0317-2

IRC INC.



TIME (MS)

PEAK DATA: 43 08 KM/H @ 132 08 MS, -2.44 KM/H @ 42 48 MS

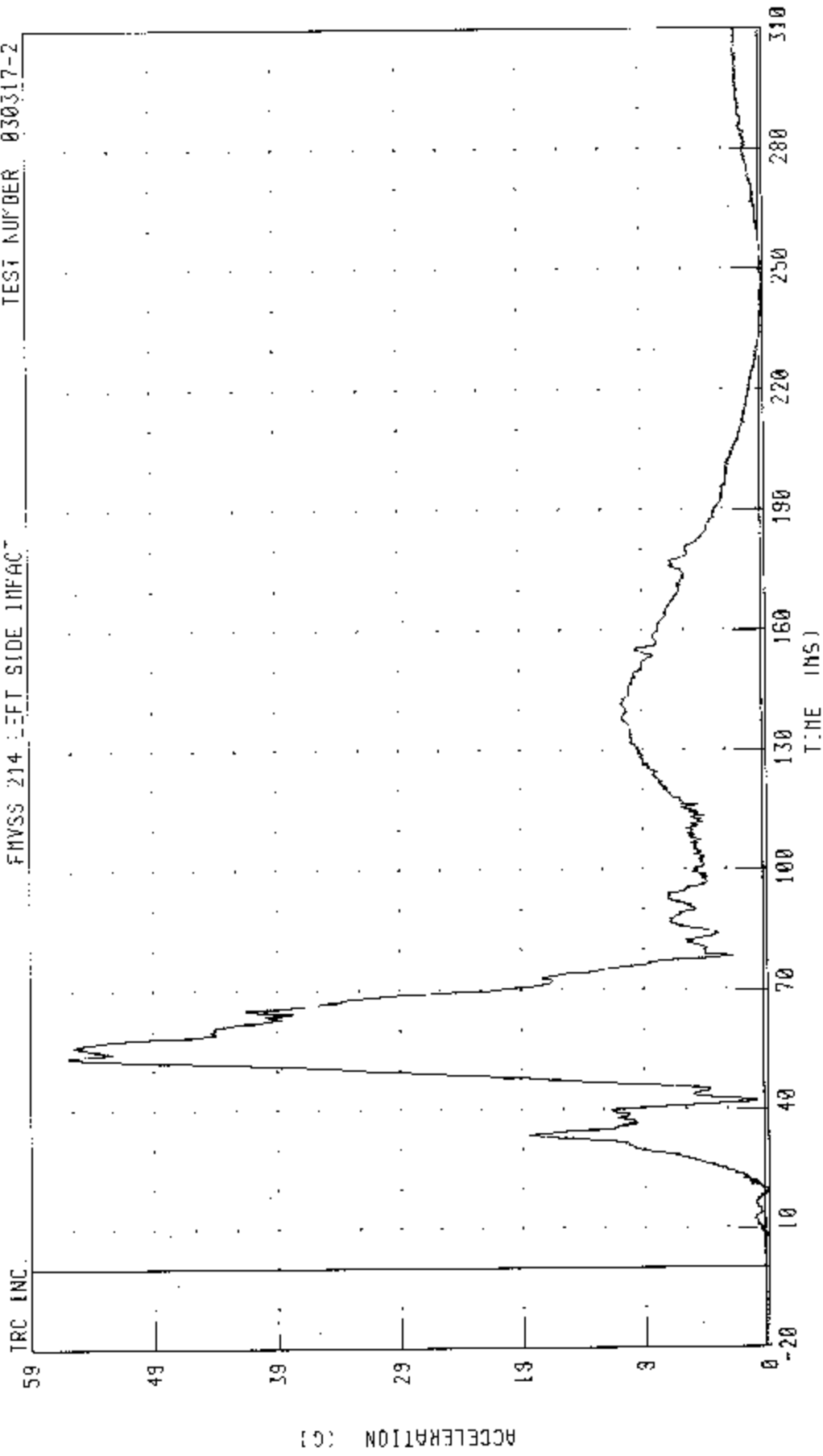
CHANNEL: HEDYV1 FILTER: CH. CLASS 180

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER HEAD Z-AXIS ACCELERATION

TEST NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT



PEAK DATA: 56.61 G @ 53.44 MS, 0.32 G @ 216.24 MS

CHANNEL: HEDZG1 FILTER: CH. CLASS 1000

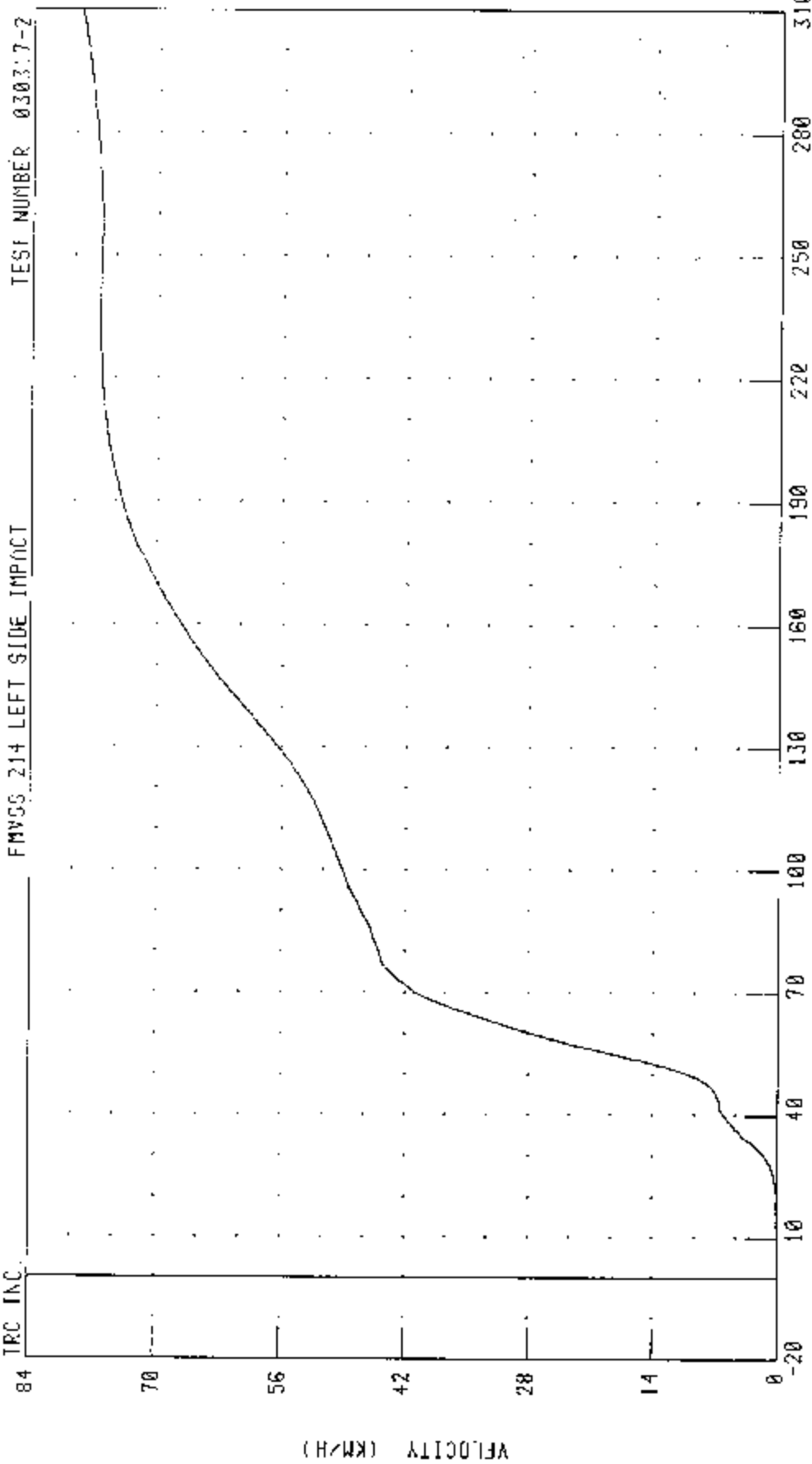
55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER HEAD Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2

TRC INC.



PEAK DATA: 70 64 KM/H @ 310.00 MS; 0.00 KM/H @ 5.52 MS

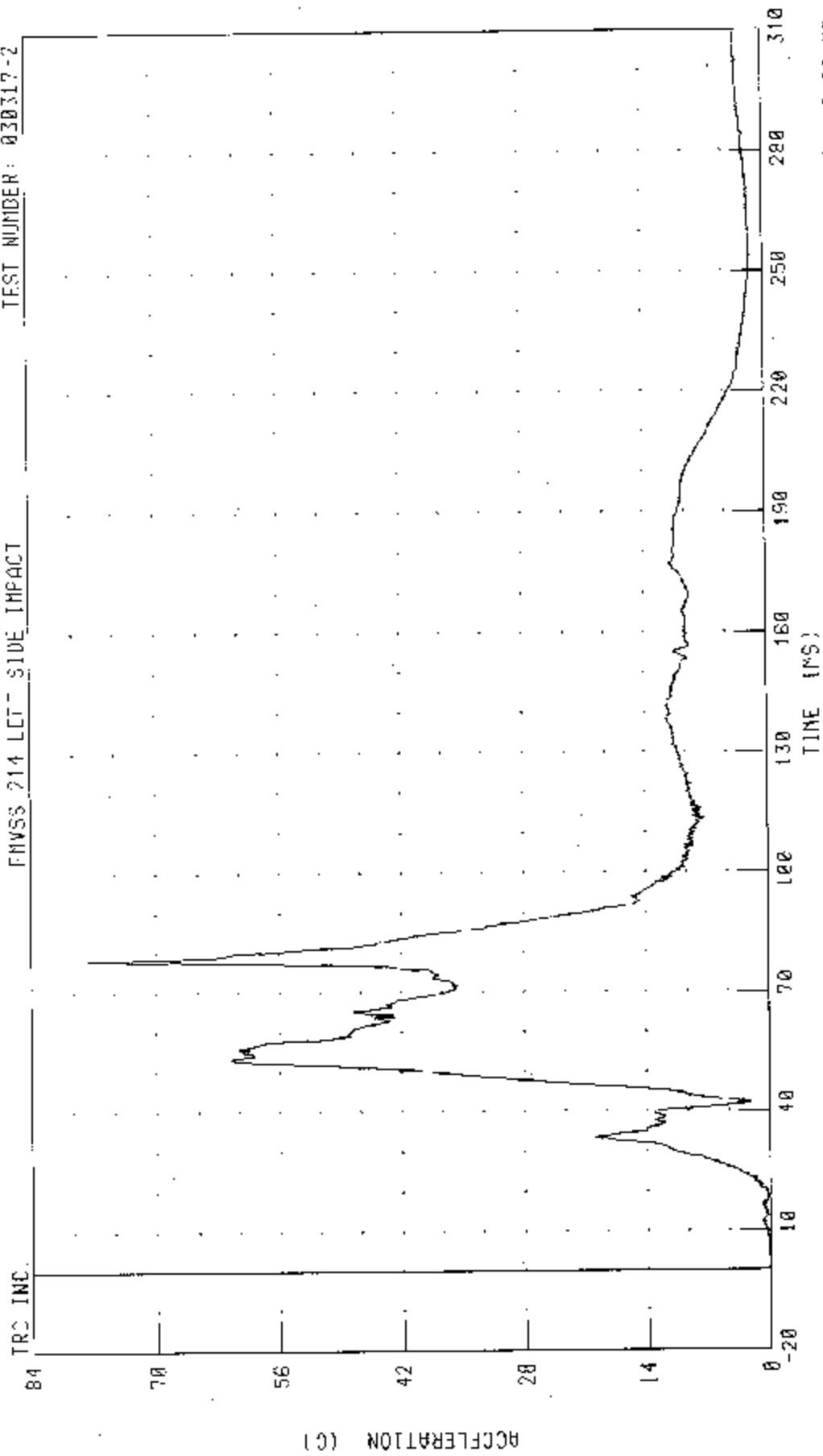
CHANNEL HEADZV1 FILTER: CH. CLASS 180

55/28 K211 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER HEAD RESIDUANT ACCELERATION

TEST NUMBER: 030317-2

FMVSS 214 LEFT SIDE IMPACT



PEAK DATA: 77.60 G @ 78.40 MS, 0.00 C @ -19.28 MS

CHANNEL: HEDR01 FILTER: CH. CLASS 1000

ACCELERATION (G)

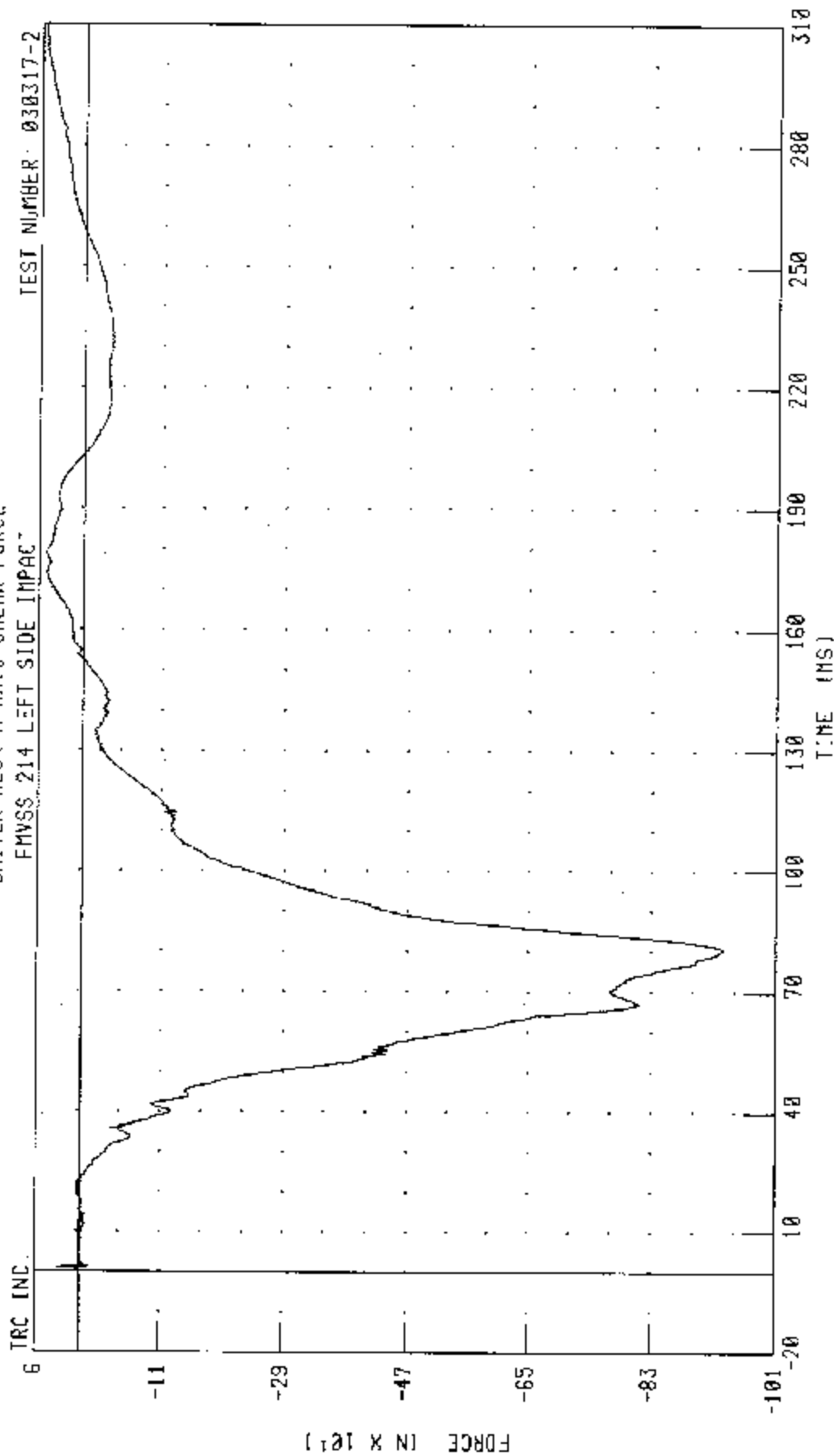
TIME (MS)

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER WICK X-AXIS SHEAR FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2



CHANNEL NEKXF1 FILTER: CH. CLASS 1000

PEAK DATA: 50.69 N @ 389.84 MS; -940.29 N @ 80.40 MS

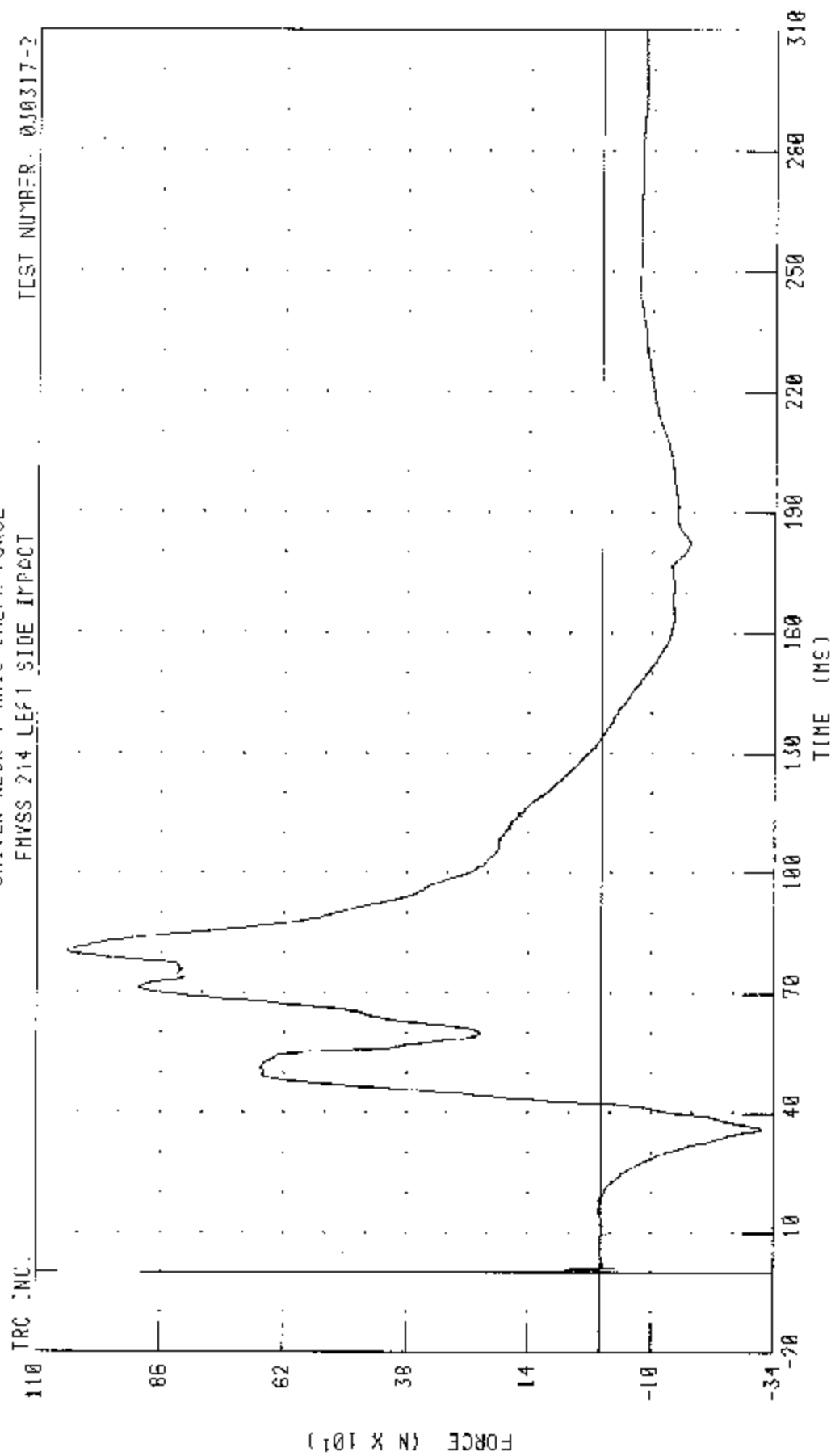


55/28 <PH 90 DEGREE SIDE IMPACT (MOVING IMPERIAL BARRIER) IN U LEFT SIDE OF 2003 MAZDA 6

DRIVER NECK Y-AXIS SHEAR FORCE

FHVS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2



CHANNEL: NEKYF1 FILTER: CH. CLASS 1000

PEAK DATA: 1042 11 N @ 80.80 MS; -317 03 N @ 35.84 MS

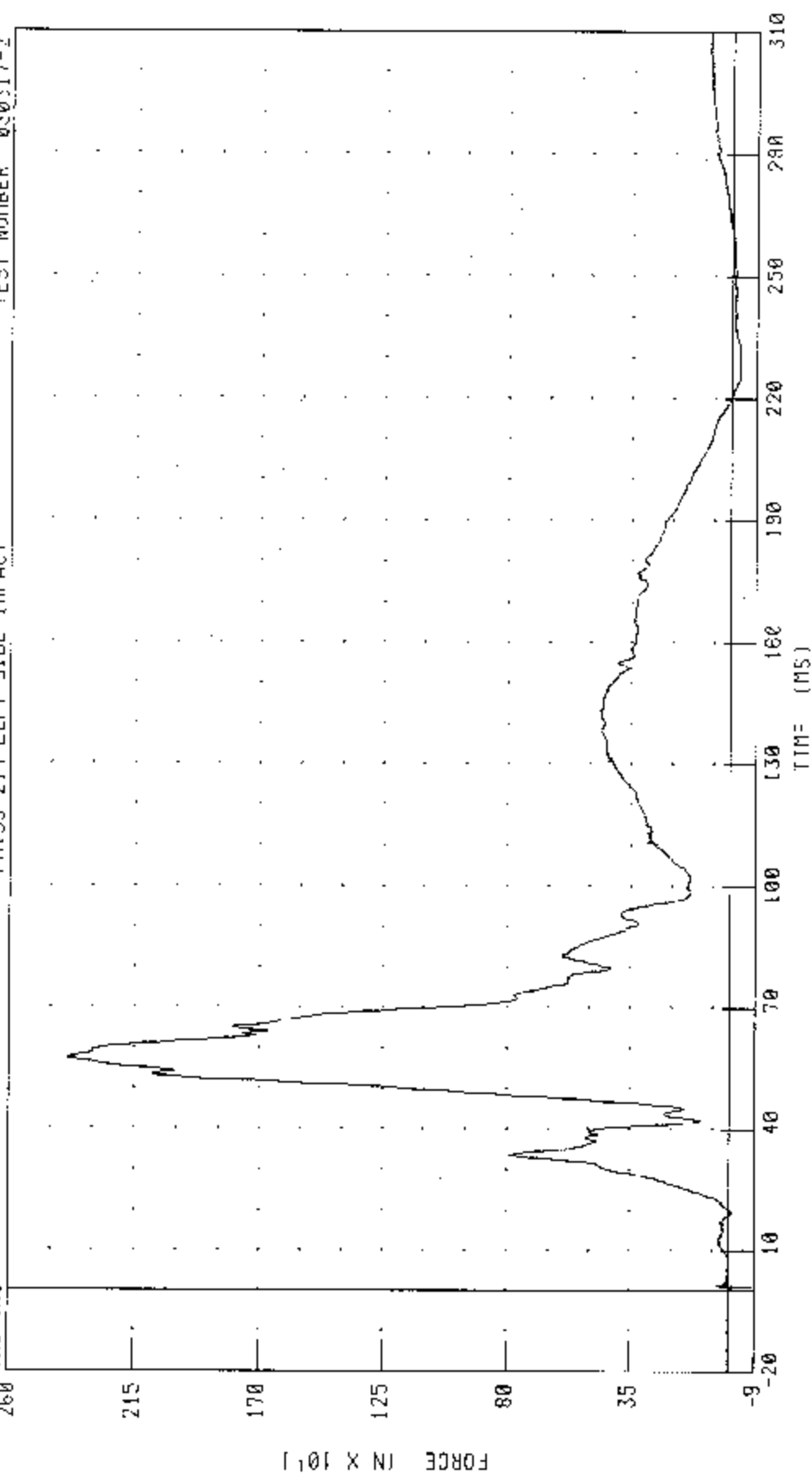
55/28 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER NECK Z-AXIS AXIAL FORCE

FMVSS 214 LEFT SIDE IMPACT

TRC INC

TEST NUMBER 030317-2



TIME (MS)

CHANNEL: NEKZF:

FILTER: CH CLASS 1000

PEAK DATA 2198.54 N @ 57.60 MS, -83.85 N @ 0.88 MS

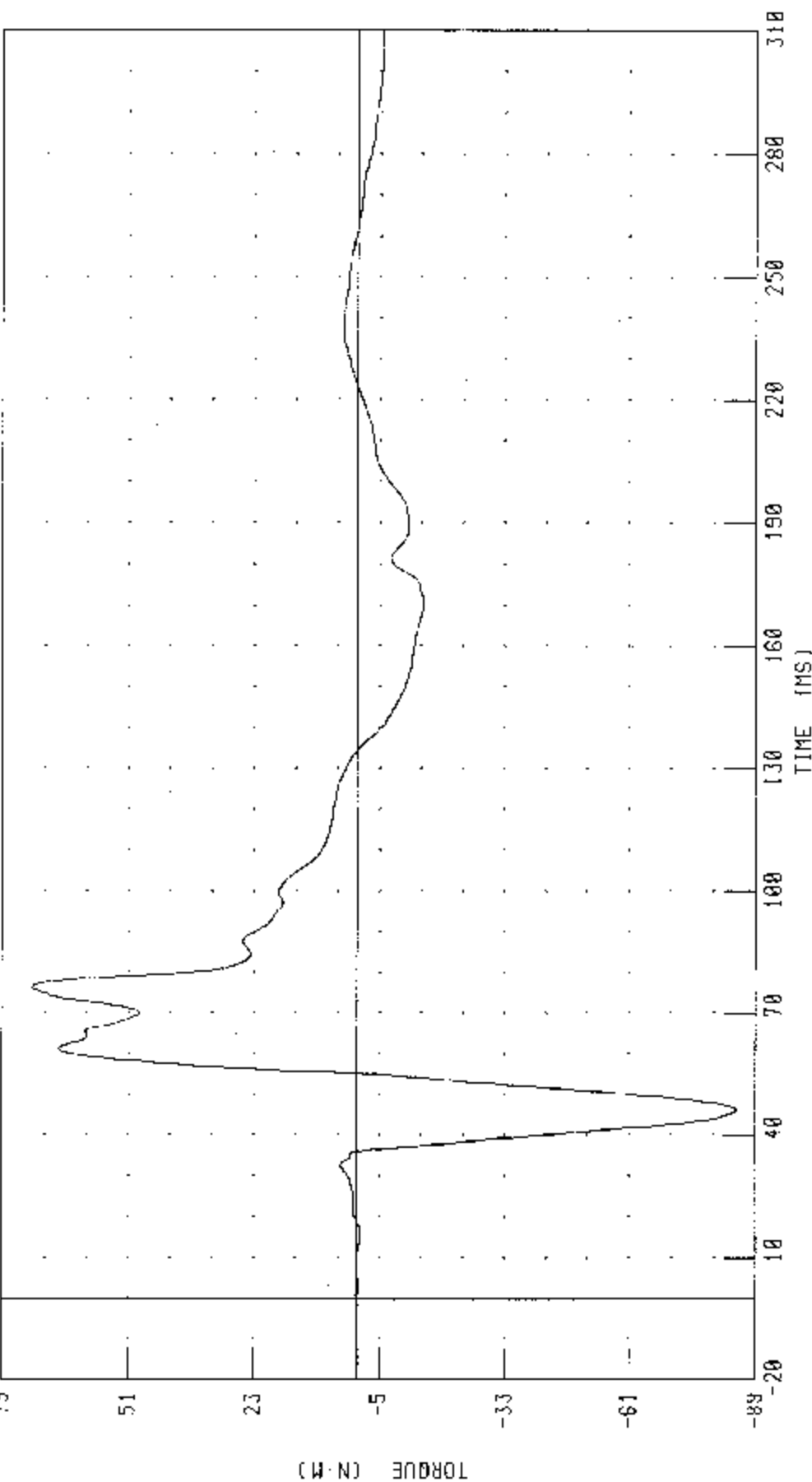
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA R

DRIVER NECK MOMENT ABOUT X AXIS

IRC INC.

FMVSS 214 LEFT SIDE IMPACT

ESI NUMBER 030317 2



CHANNEL: NEKX11 FILTER: CH CLASS 600

PEAK DATA: 72 38 N-M @ 76 40 MS; -84 72 N-M @ 46.32 MS

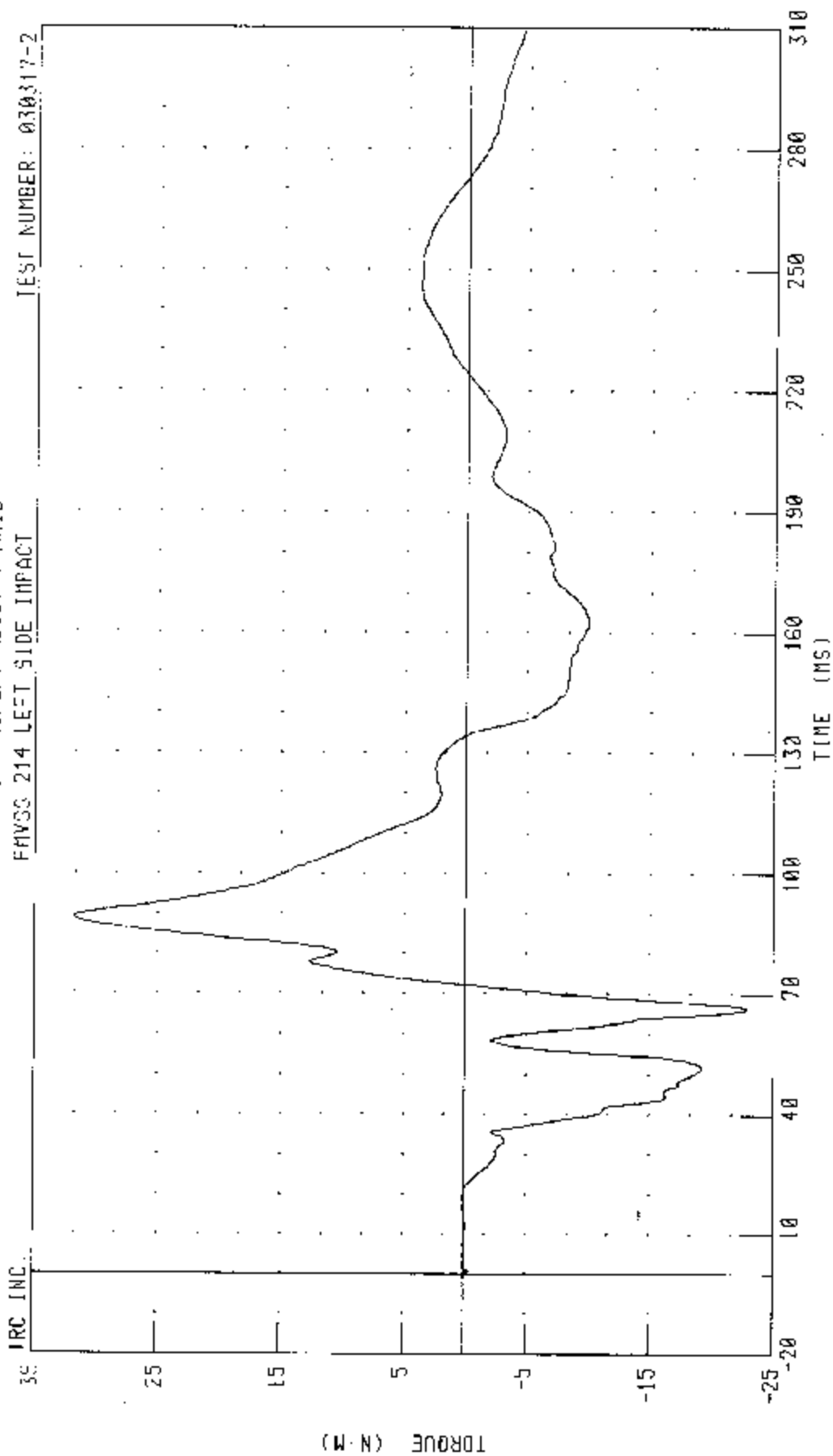
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 5

DRIVER NECK MOMENT ABOUT Y AXIS

IRC INC.

FAVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2



CHANNEL: NEKYM1 FILTER: CH CLASS 600

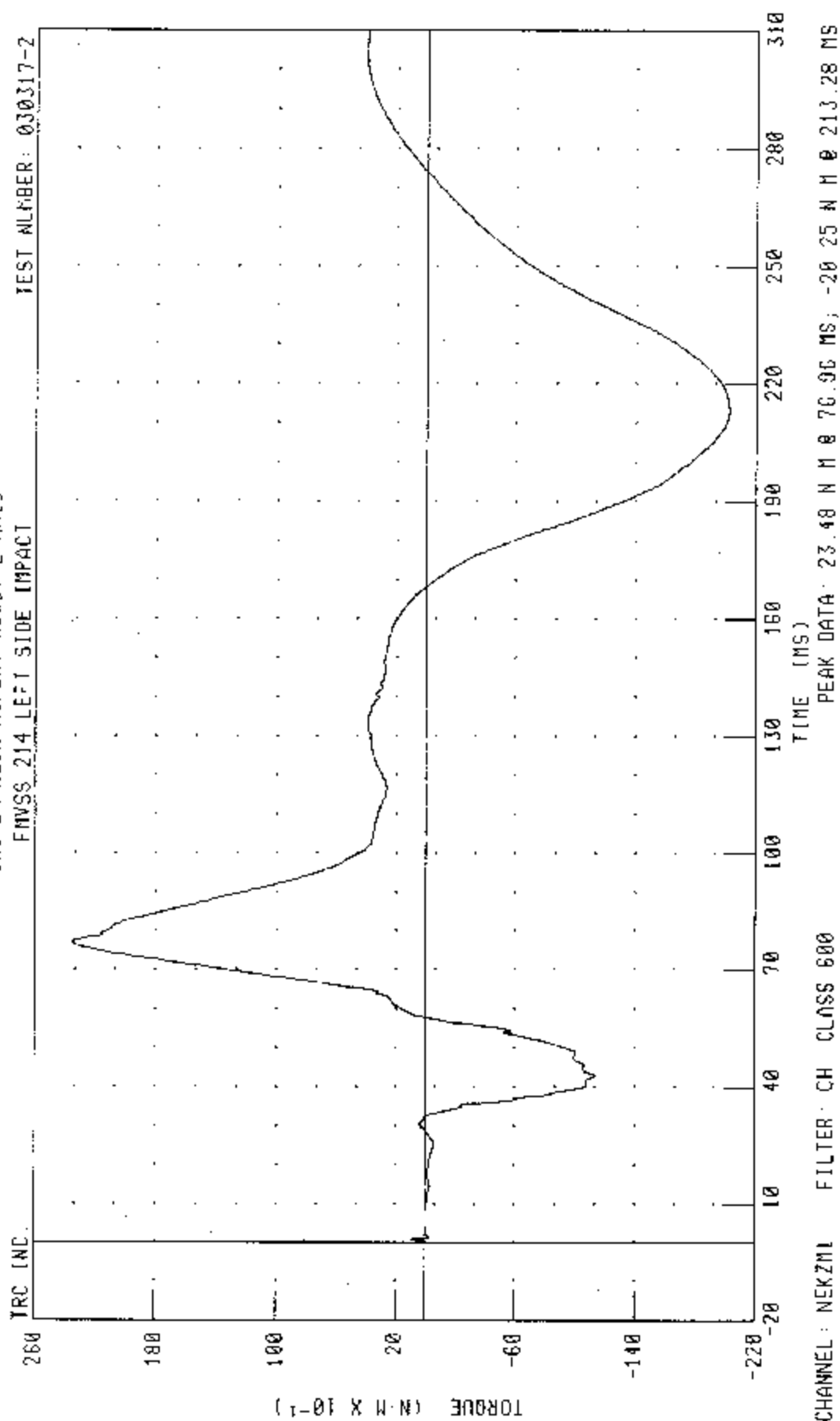
PEAK DATA: 31 72 N M @ 66.84 MS; -22.87 N M @ 66 40 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER NECK MOMENT ABOUT Z AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2



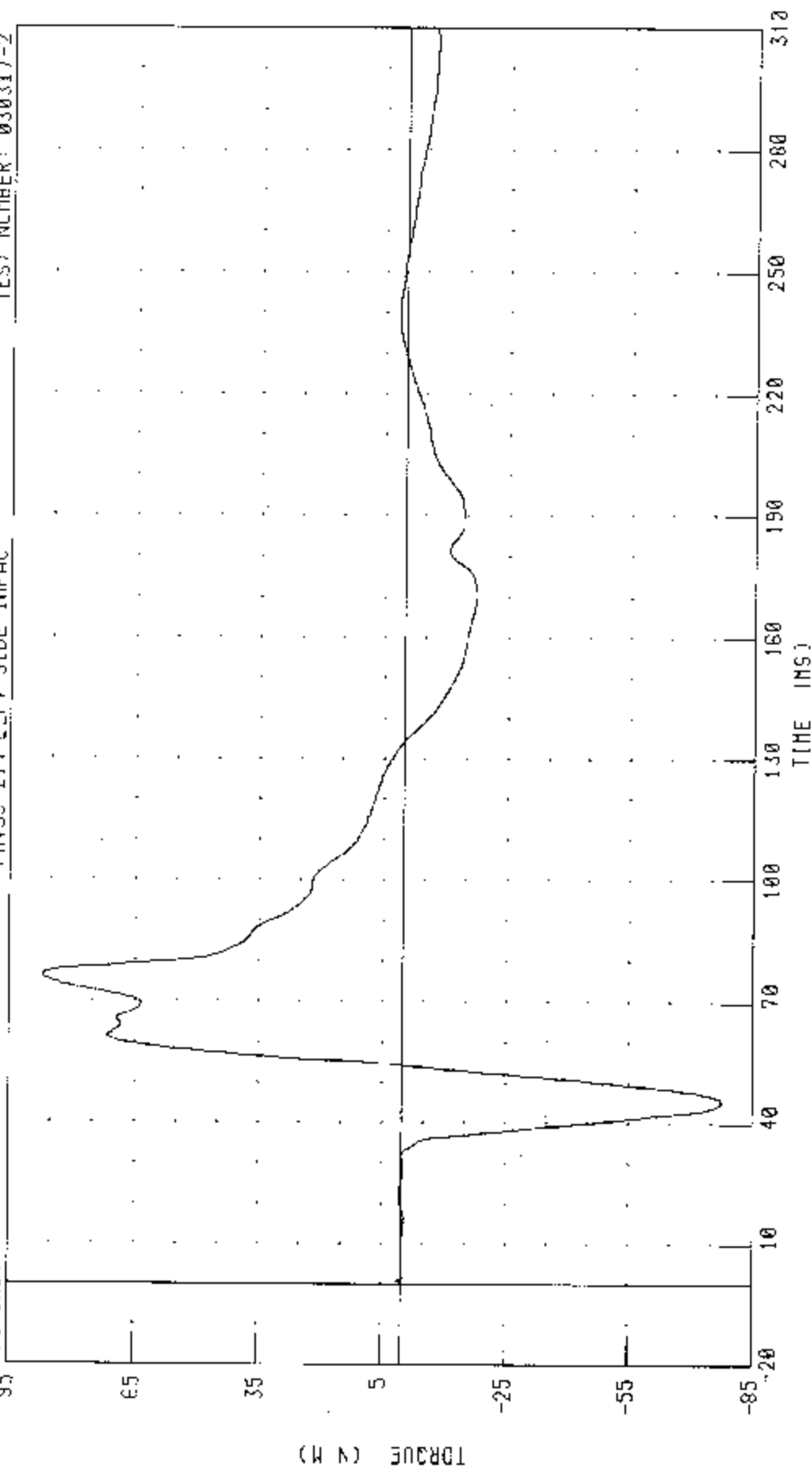
55/28 KPH 90 DEGREE SIDE IMPACT - MOVING DEFORMABLE BARRIER - IN10 LEFT SIDE OF 7003 MAZDA 6

DRIVER NECK OCCIPITAL CONDYLE MOMENT 030JT X AXIS

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2

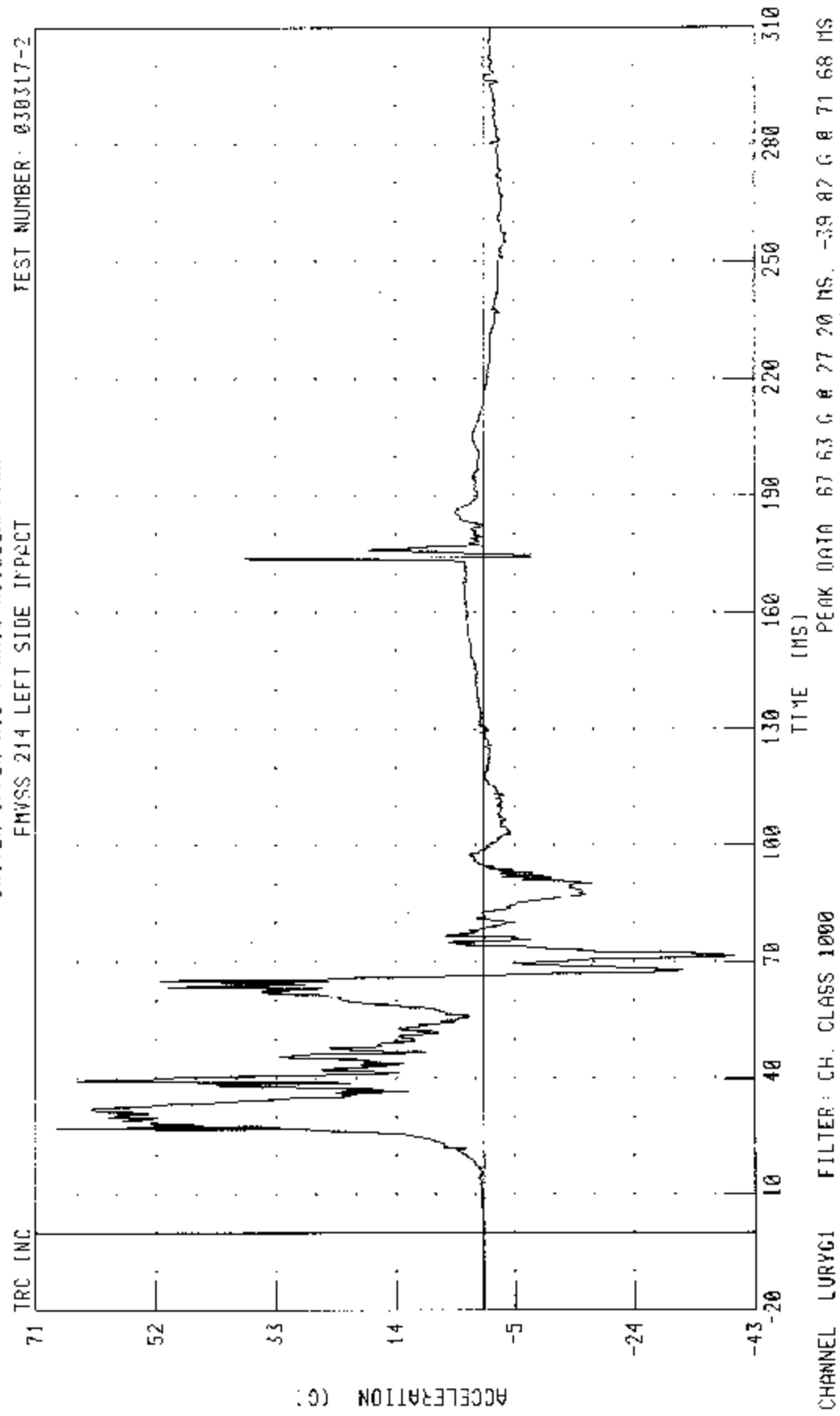


CHANNEL NK0X11 FILTER: CH CLASS 600

TIME (MS)

PEAK DATA: 87.82 N.M @ 76.40 MS, -77.49 N.M @ 45.68 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) (NIO LEFT SIDE OF 2003 MAZDA R  
 DRIVER UPPER RIB Y-AXIS ACCELERATION



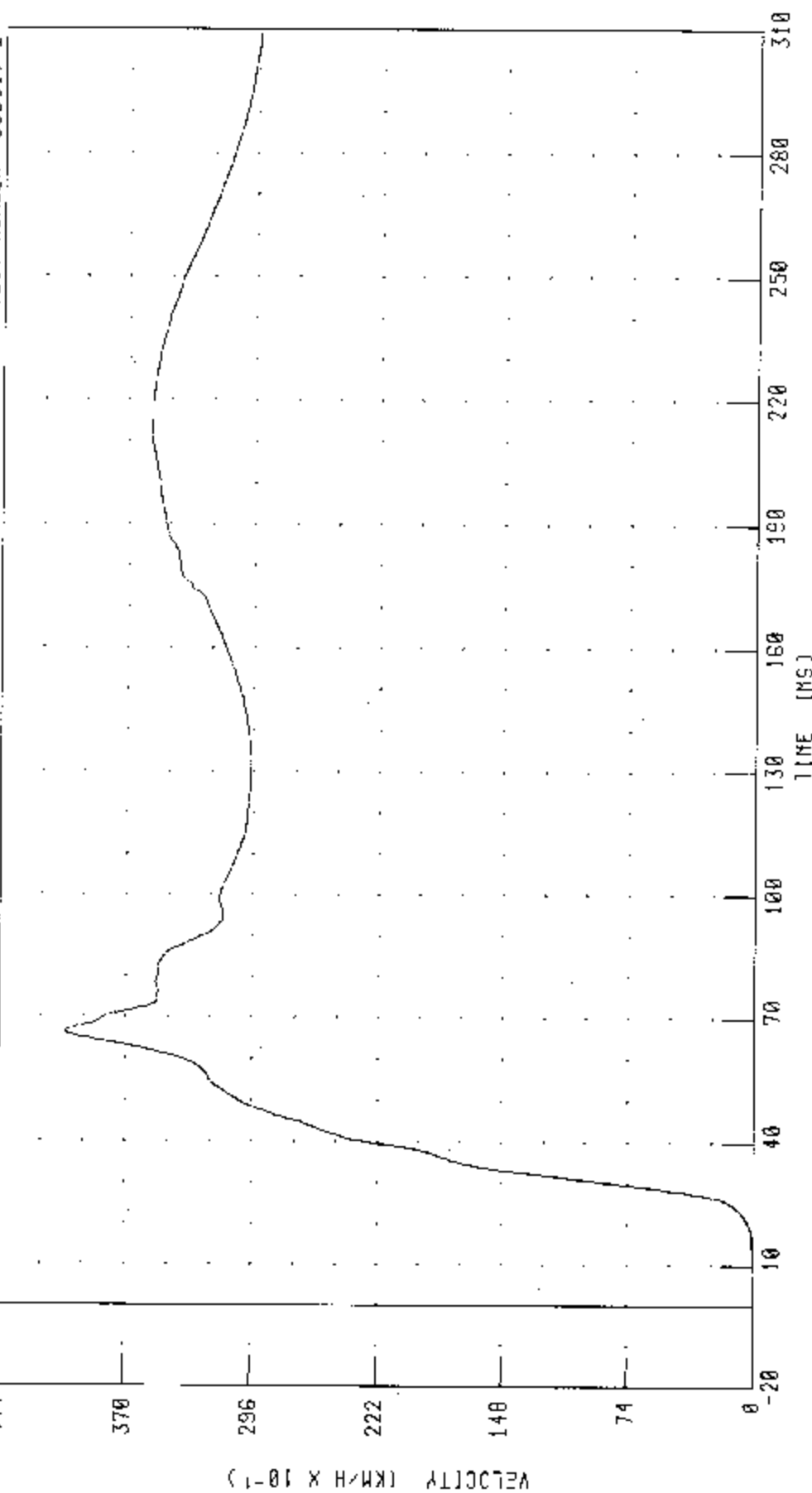
55/28 KPH 30 DEGREE SIDE IMPACT (MOVING INFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MP/UA 6

DRIVER UPPER RIB Y-AXIS VELOCITY

TRC INC

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2



TIME (MS)

CHANNEL: LURVV1 FILTER: CH. CLASS 100

PEAK DATA: 40.51 KM/H @ 50.56 MS; 0.00 KM/H @ 0.49 MS

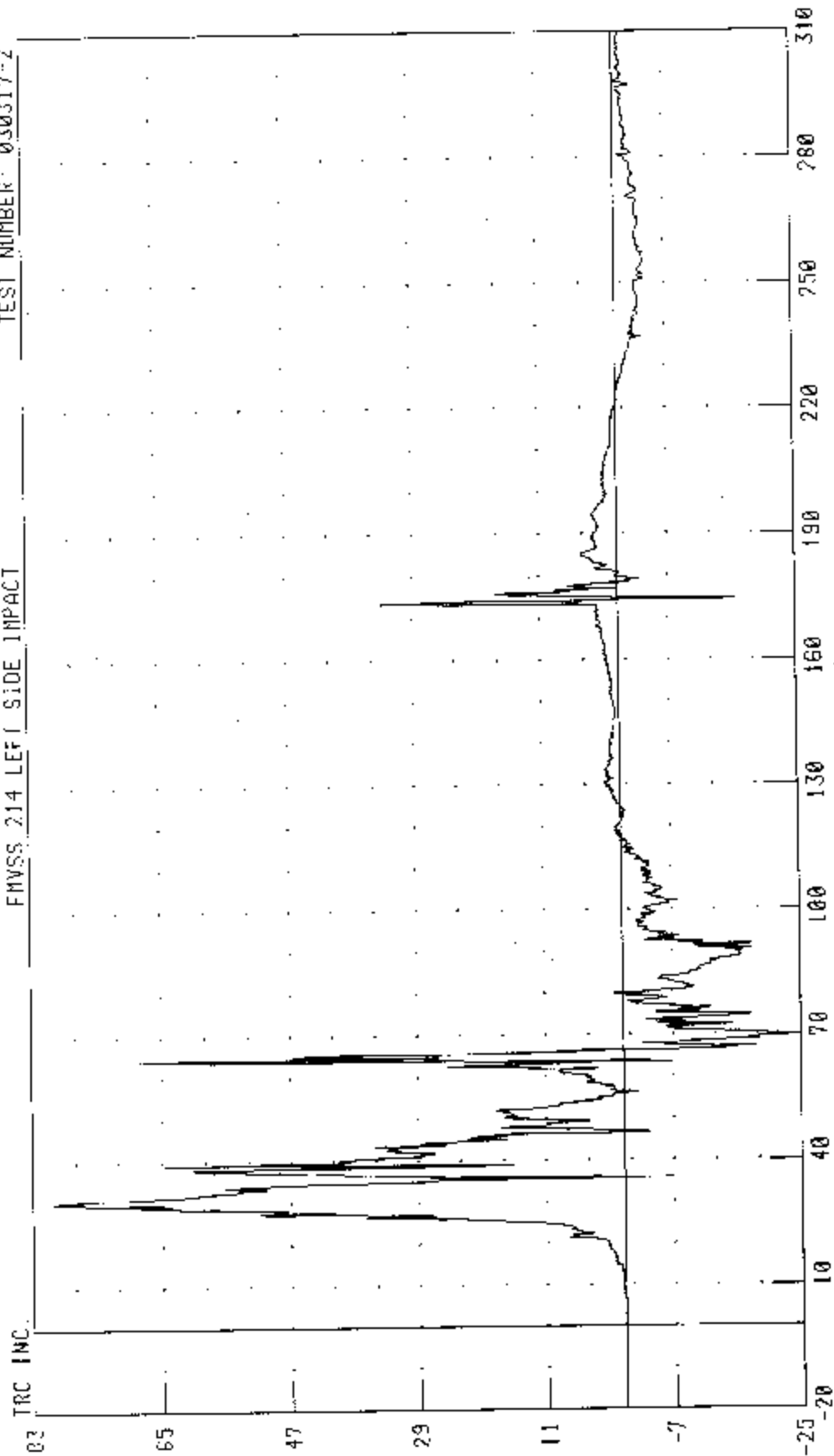


55/28 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER LOWER RIB V AXIS ACCELERATION

TEST NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT



PEAK DATA: 79.95 G @ 30.48 MS, -23.60 G @ 69.84 MS

CHANNEL: LLRYC1 FILTER: CH. CLASS 1000

(G) NOTATION

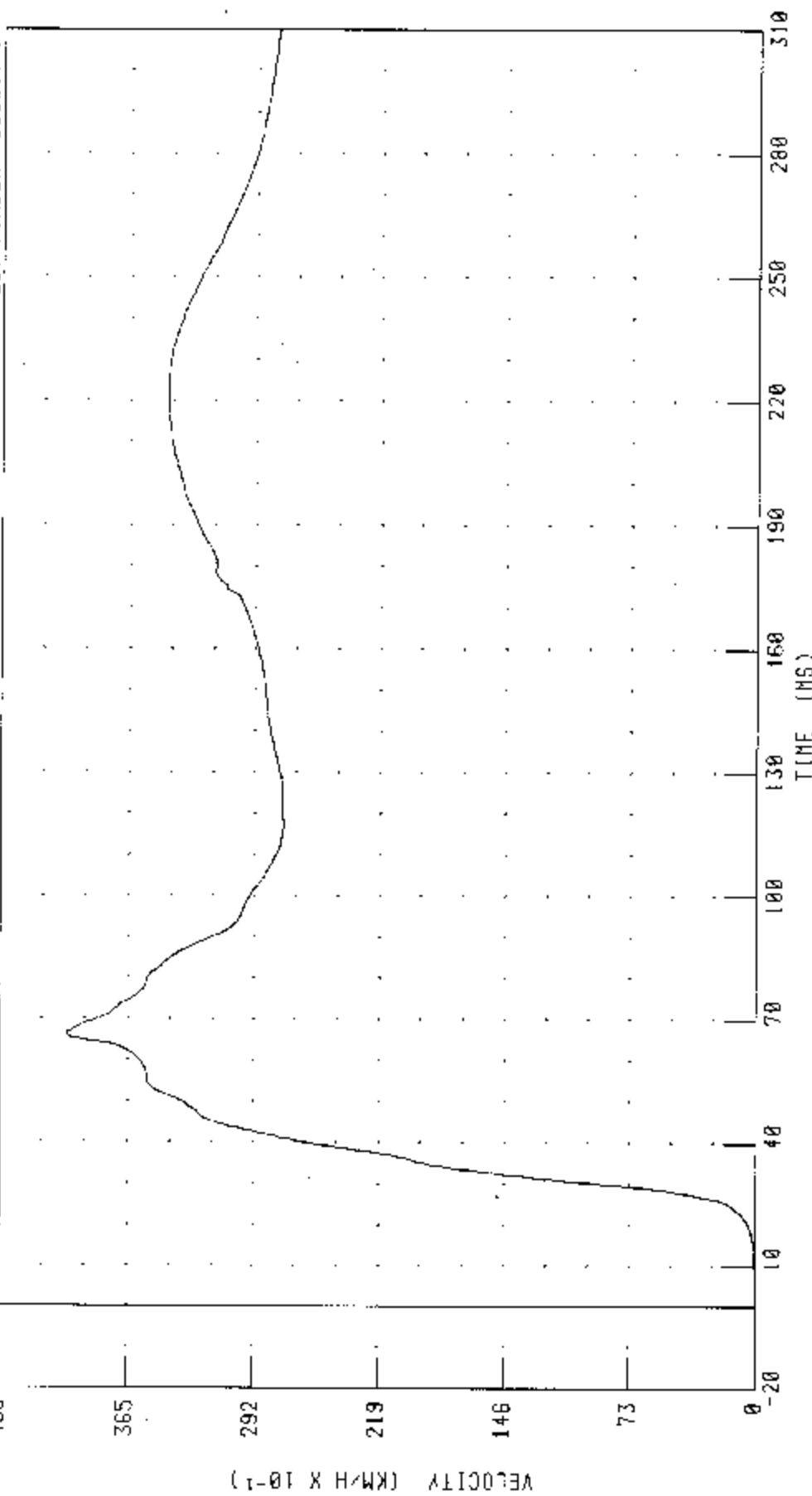
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER LOWER RIB V AXIS VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2



CHANNEL: LLRYV1 FILTER: CH. CLASS 180

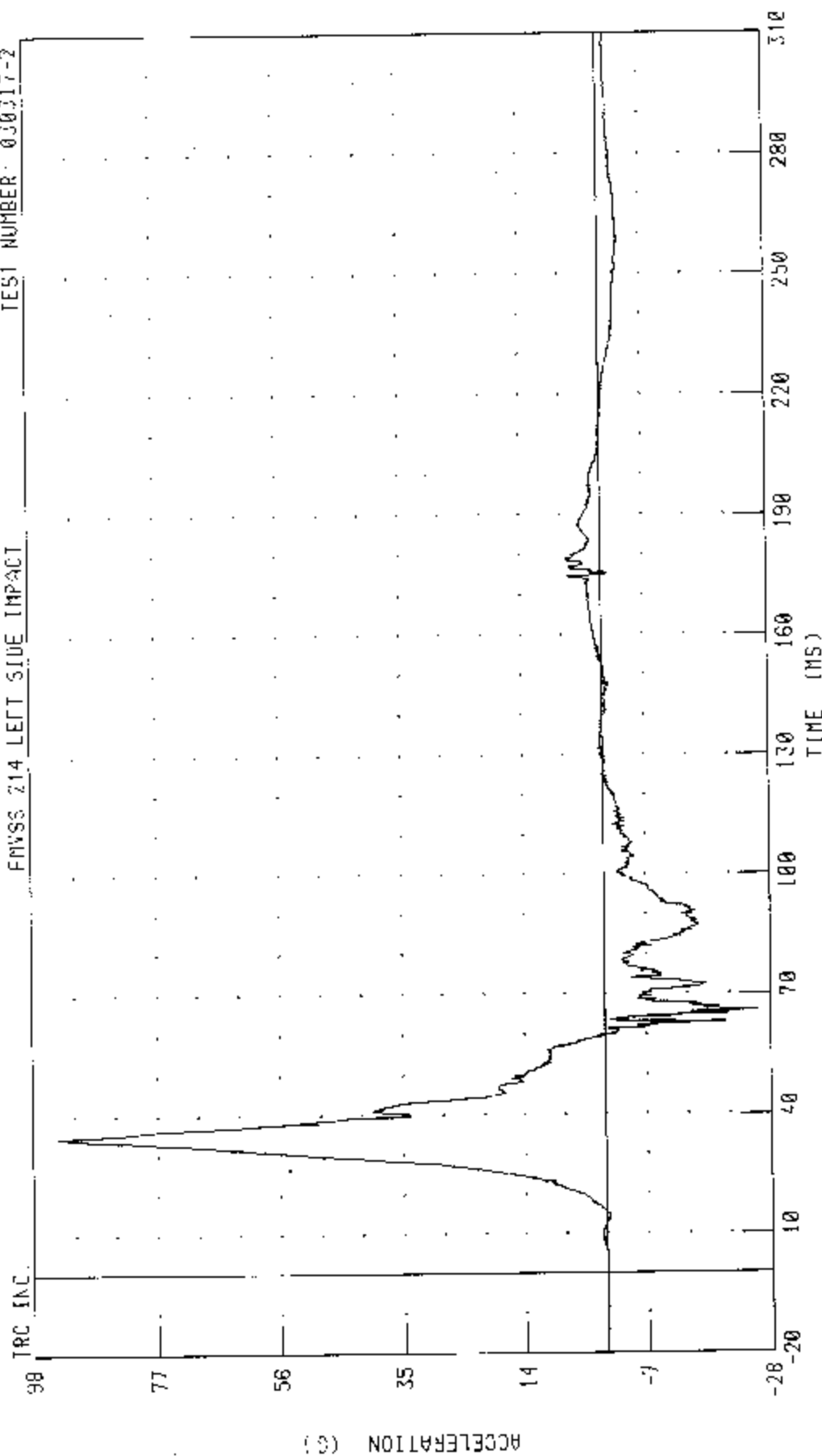
PEAK DATA 39.98 KM/H @ 66.32 MS; 0.00 KM/H @ 0.95 MS

55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER LOWER SPINE Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2



CHANNEL: T12YG1 FILTER: CH CLASS 1000

PEAK DATA 93.77 G @ 34.64 MS. -25.66 G @ 66.00 MS

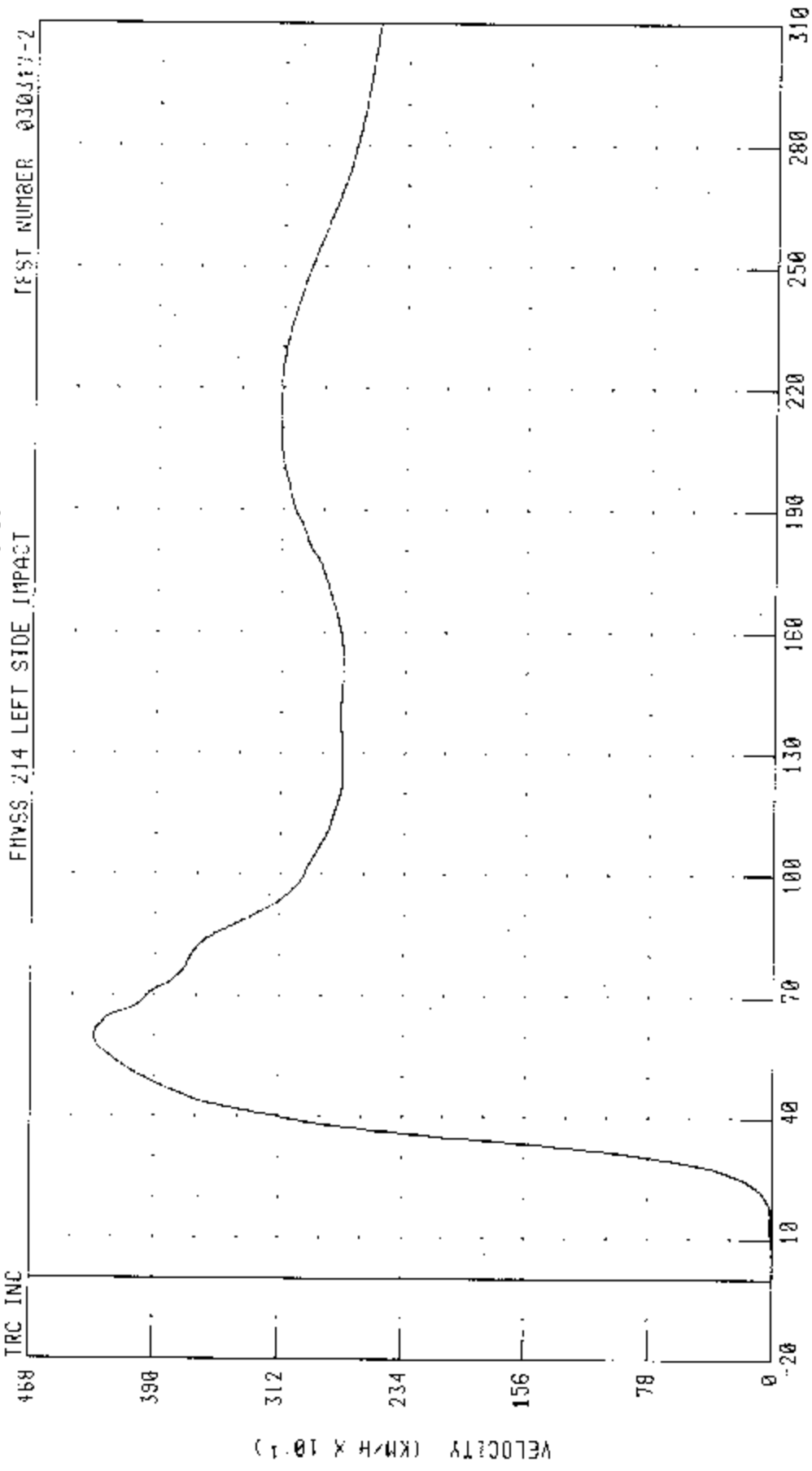
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER LOWER SPINE Y-AXIS VELOCITY

TEST NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT

TRC INC



CHANNEL: T-2YV1 FILTER: CH CLASS 180 PEAK DATA: 42.85 KM/H @ 59.92 MS, 0.80 KM/H @ 0.80 MS

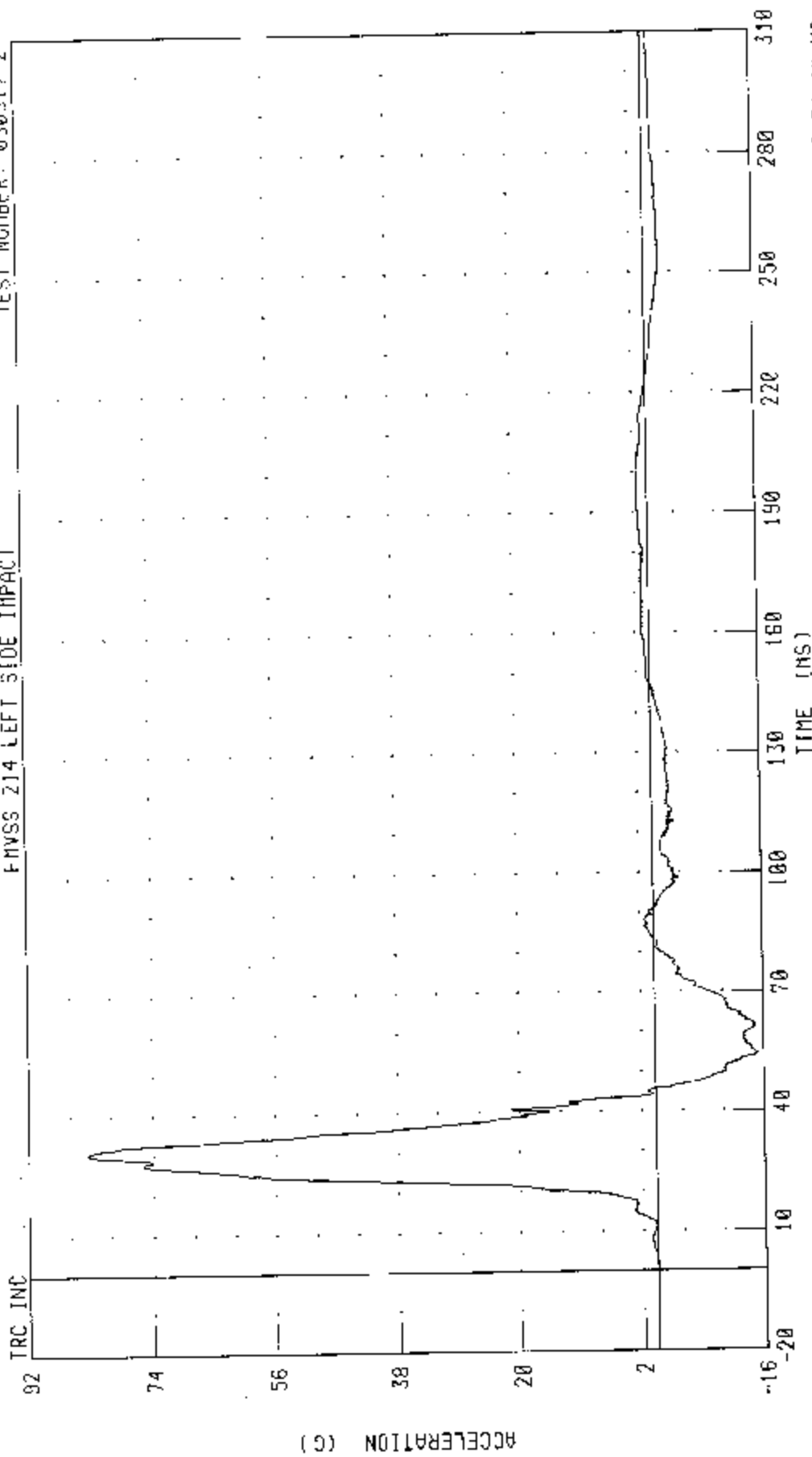
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER PELVIS Y-AXIS ACCELERATION

TEST NUMBER: 030317-2

FMVSS 214 LEFT SIDE IMPACT

TRC INC



ACCELERATION (G)

PEAK DATA 83.44 G @ 30.80 MS; -15.10 G @ 54.49 MS

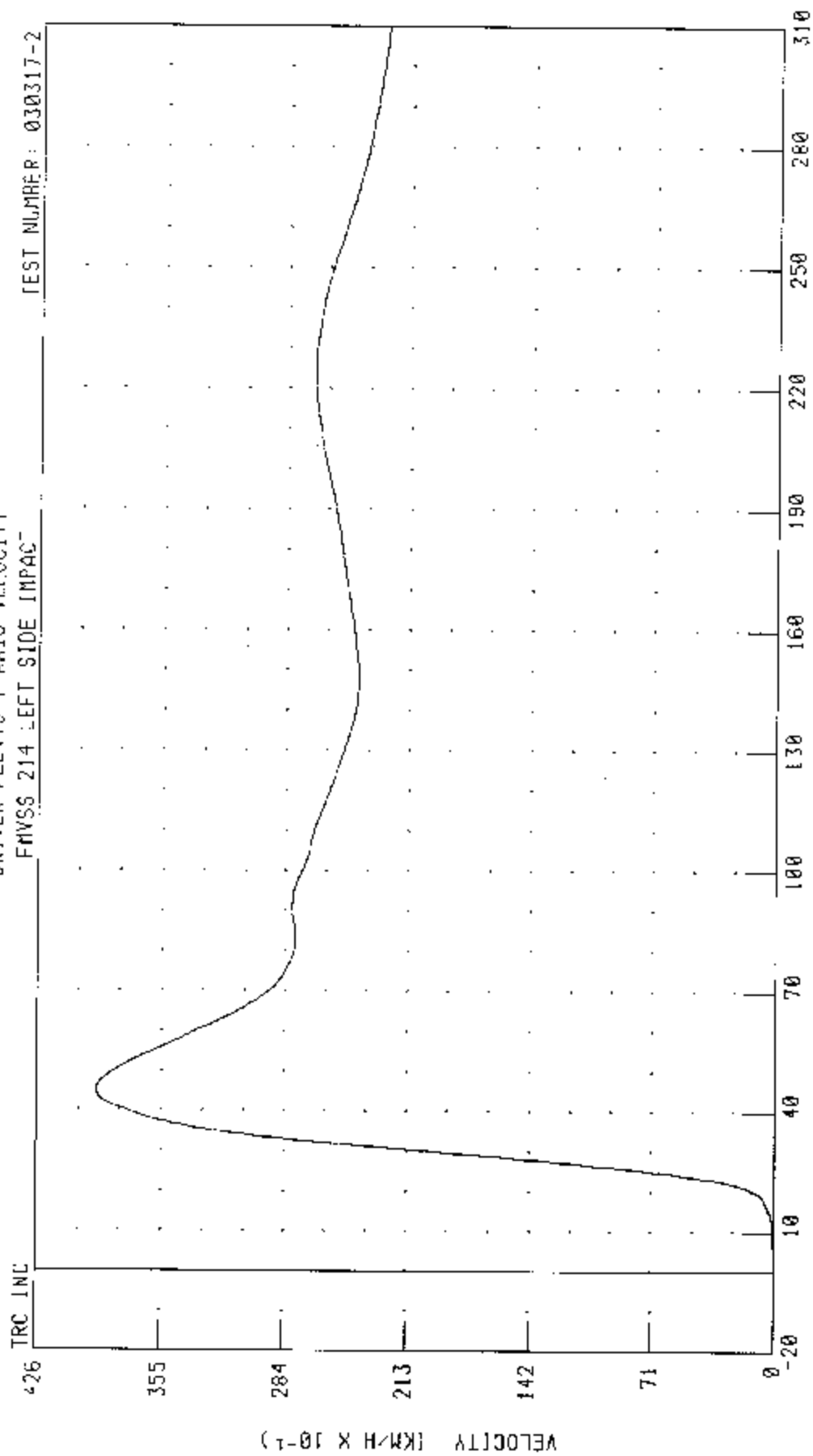
CHANNEL: PEVYG1 FILTER: CH CLASS 1000

55/28 KPH 90 DEGREE SIDE IMPACT - MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 MAZDA C

DRIVER PELVIS Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2



CHANNEL1: PFVYV1

FILTER: CH. CLASS 1B0

TIME (MS)

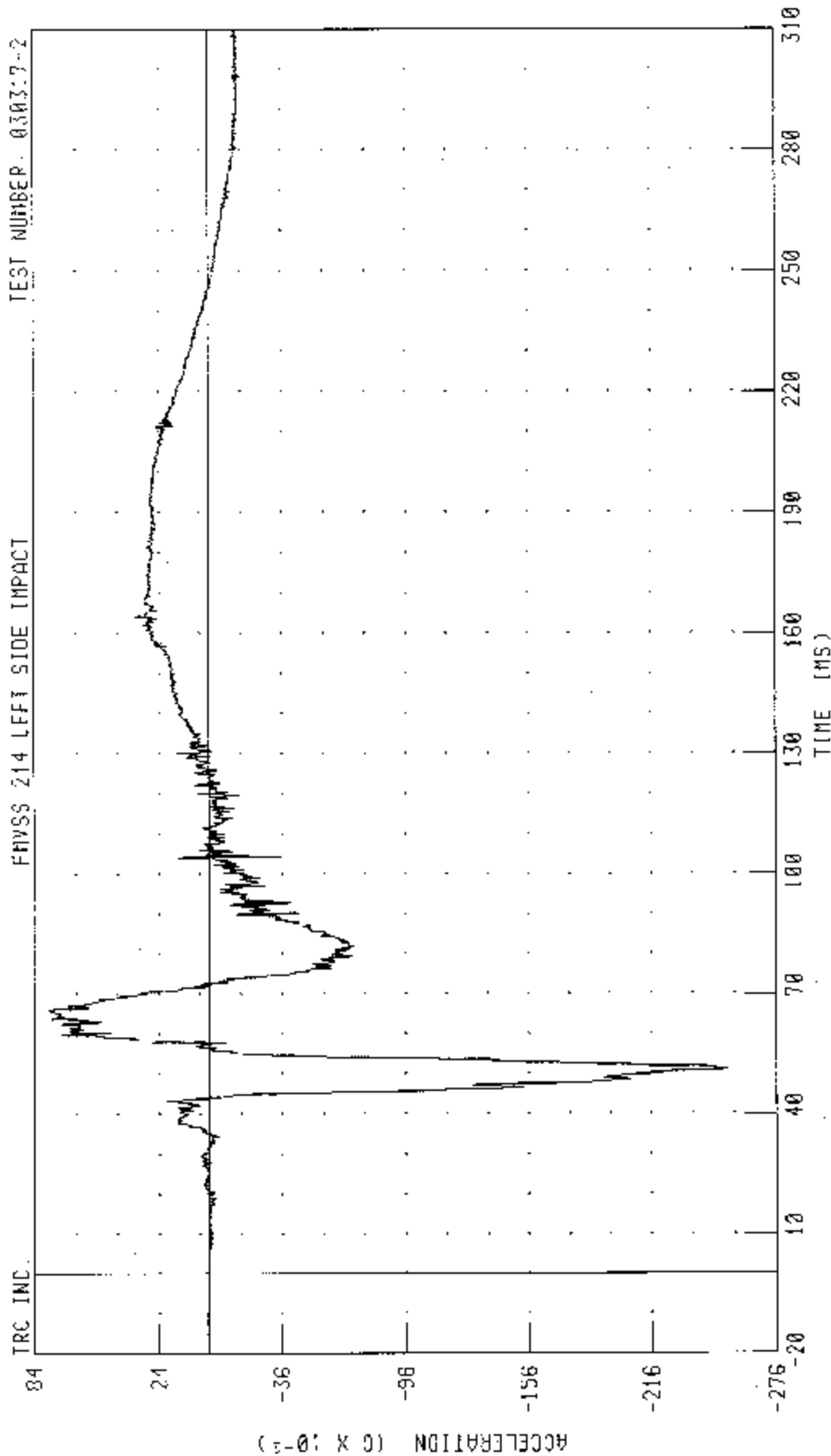
PEAK DATA 39.10 KM/H @ 45.44 MS, 0.00 K1/4 @ 0.00 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING INFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER HEAD X-AXIS ACCELERATION

TEST NUMBER: 030317-2

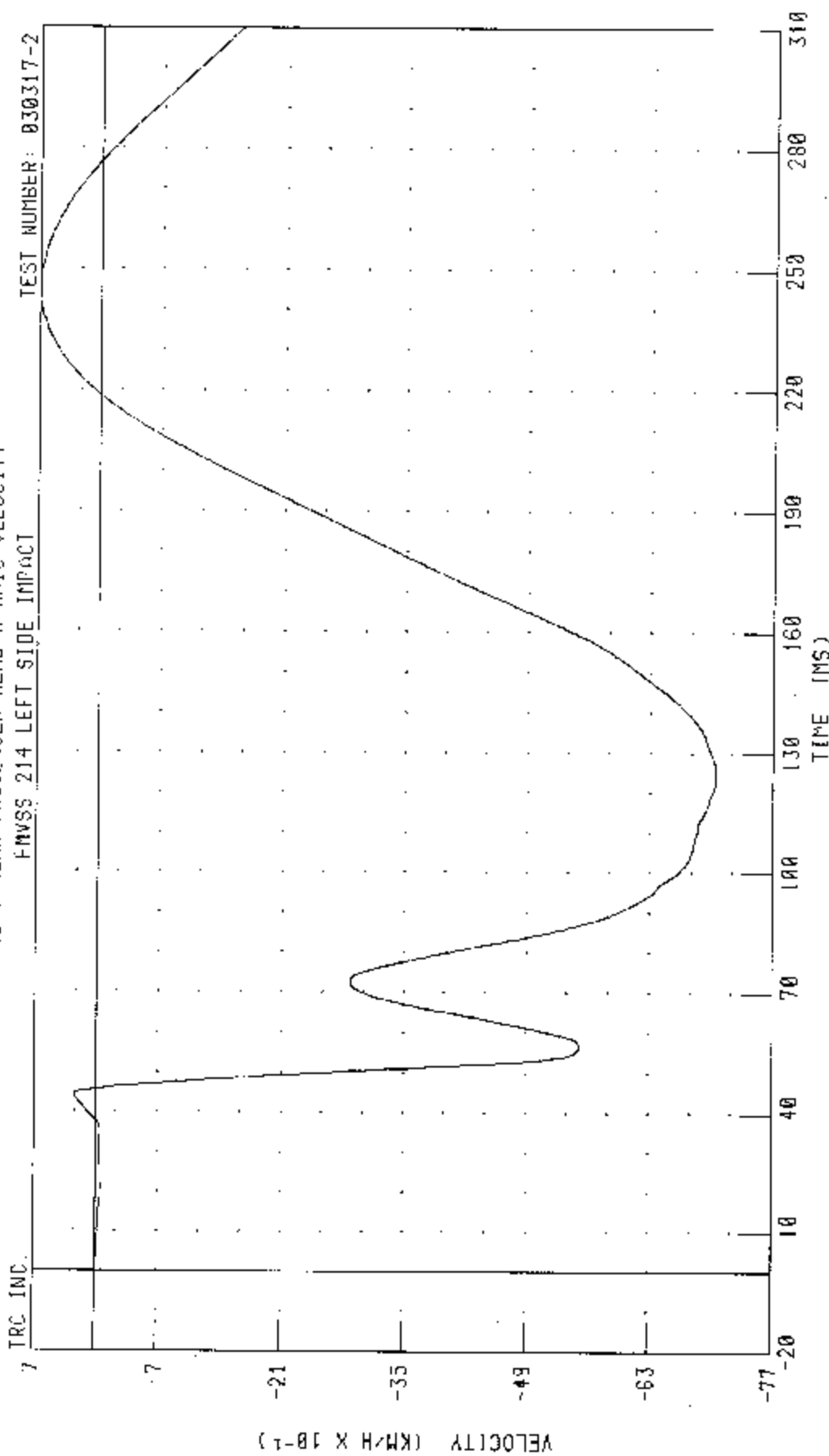
PHYSS 214 LEFT SIDE IMPACT



CHANNEL: HEDXG4 FILTER: CF CLASS 1000

PEAK DATA: 7 66 0 0 66 08 MS, 25 25 6 0 51.12 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
LEFT REAR PASSENGER HEAD X-AXIS VELOCITY

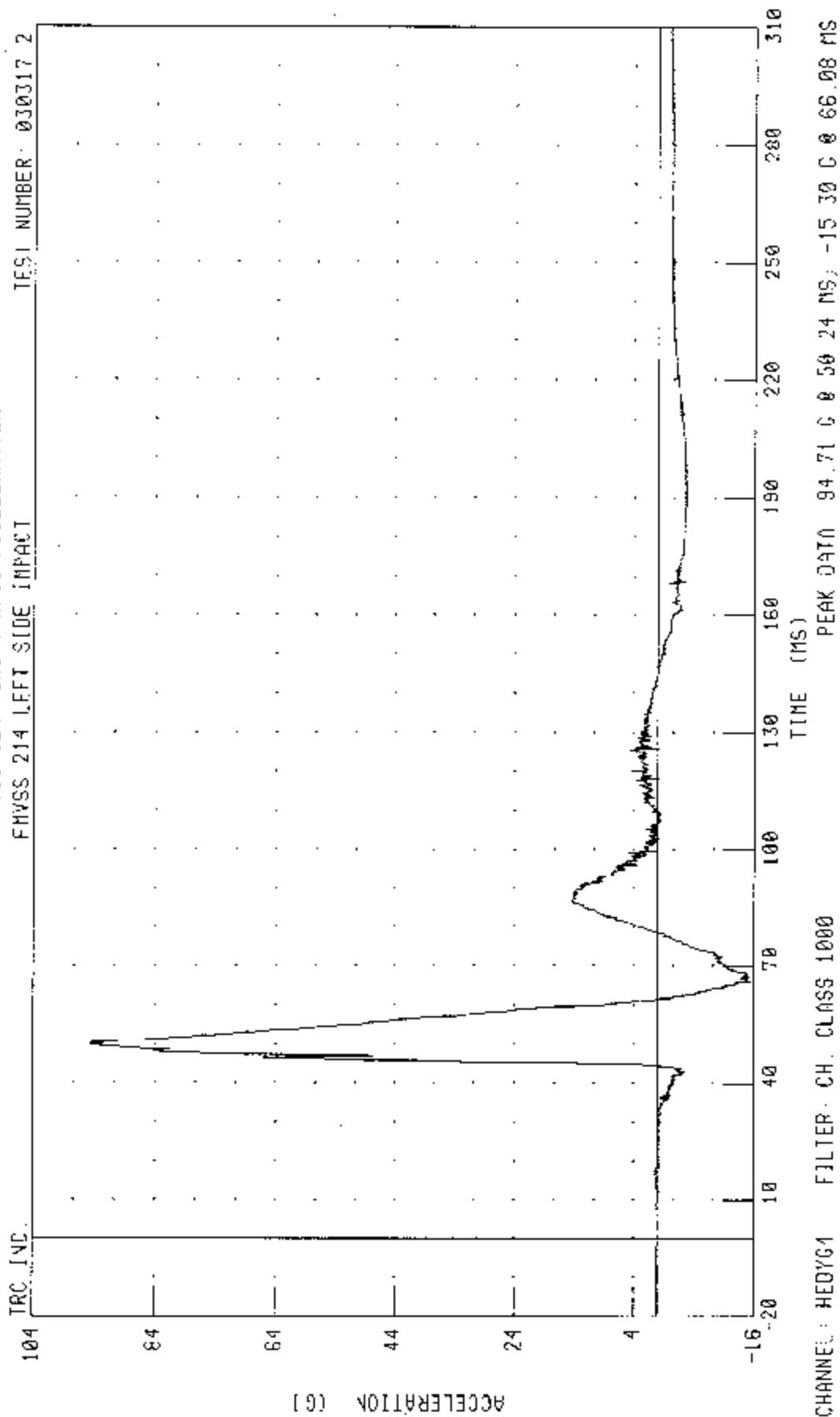


CHANNEL: HFDXV4 FILTER: CH CLASS: 180

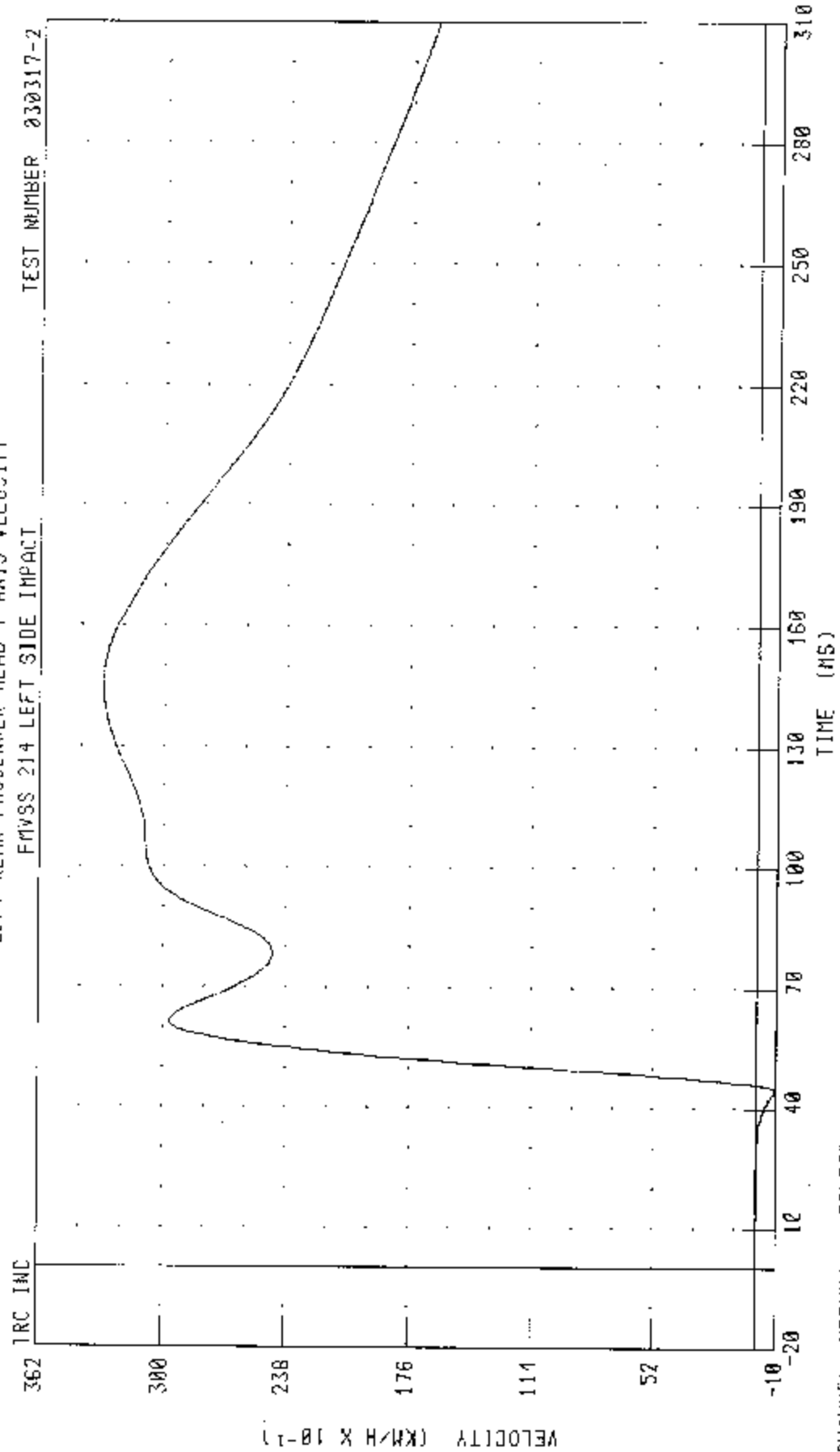
PEAK DATA: 0 71 KM/H @ 244.96 MS, -7.05 KM/H @ 126.08 MS



55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 H470A 6  
LEFT REAR PASSENGER HEAD Y-AXIS ACCELERATION



55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 LEFT REAR PASSENGER HEAD Y-AXIS VELOCITY



TEST NUMBER 030317-2

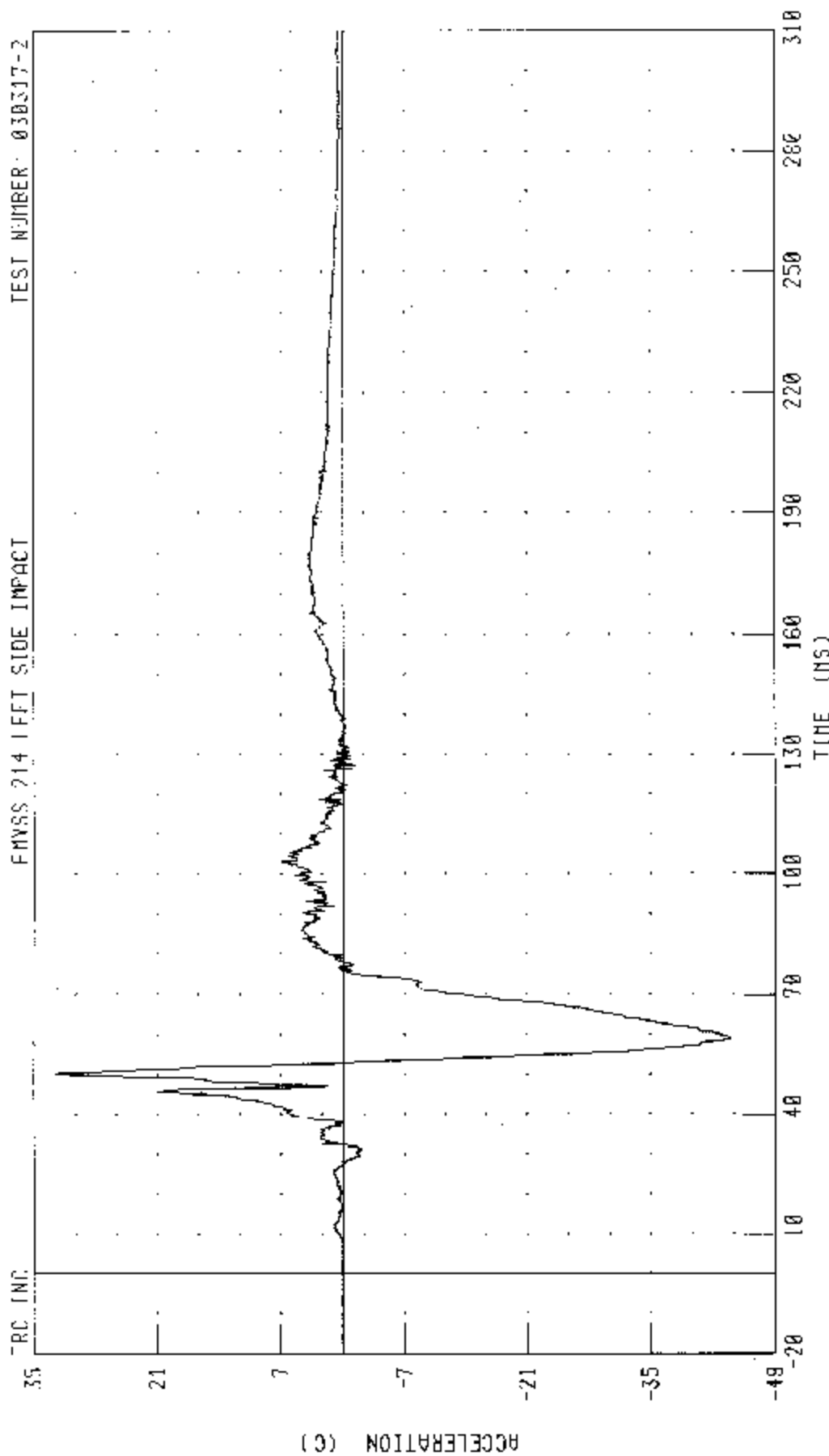
FMVSS 214 LEFT SIDE IMPACT

CHANNEL: HEDYV4 FILTER CH. CLASS 180

PEAK DATA: 33.03 KM/H @ 146.24 MS; -0.91 KM/H @ 44.48 MS

55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2023 MAZDA 6  
LEFT REAR PASSENGER HEAD Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT TEST NUMBER: 030317-2



CHANNEL: HEDZG4 FILTER: CH CLASS 1000

PEAK DATA: 32.53 G @ 50.40 MS, -43.95 G @ 59.12 MS

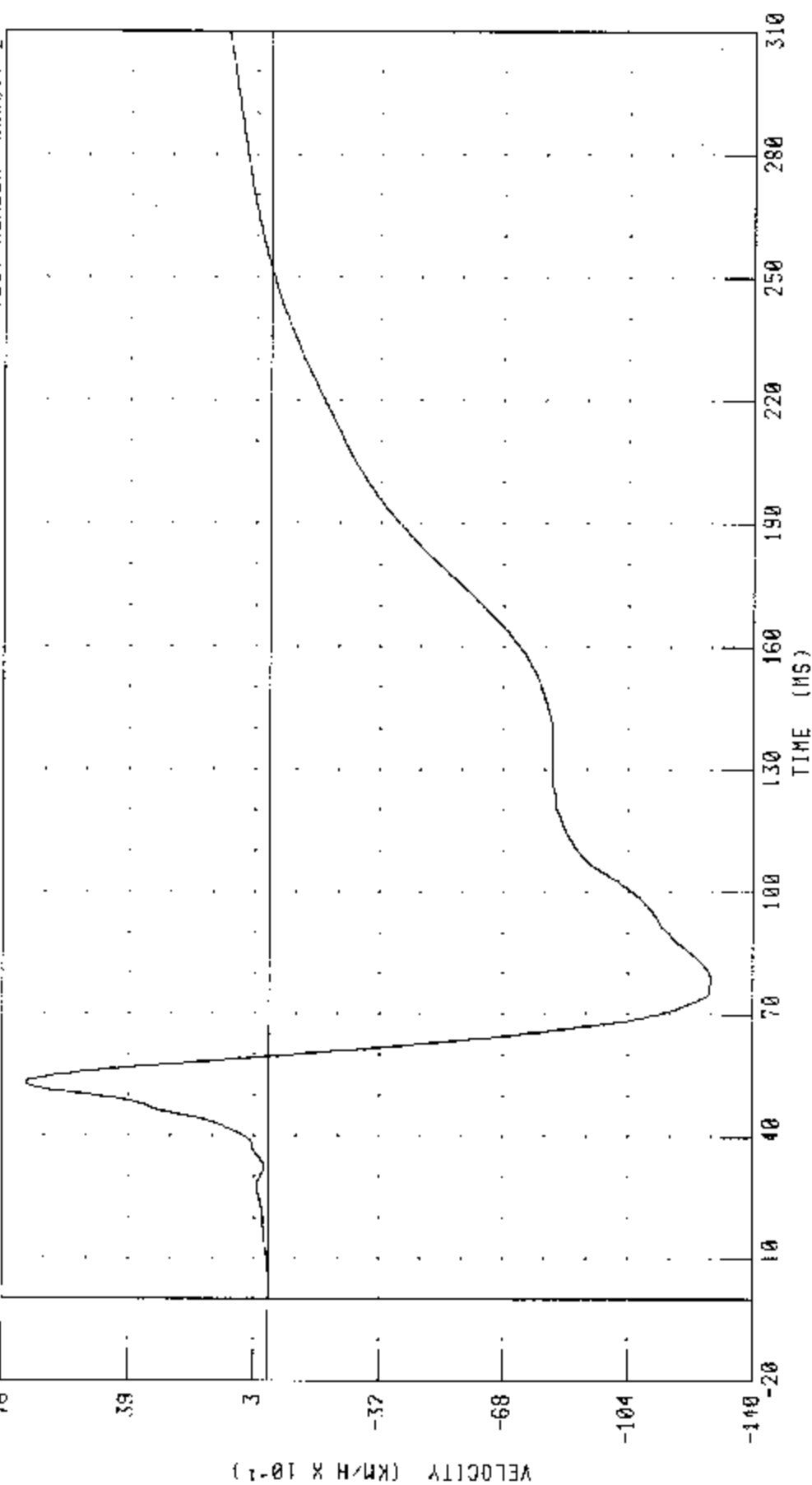
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER HEAD Z-AXIS VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2



TIME (MS)

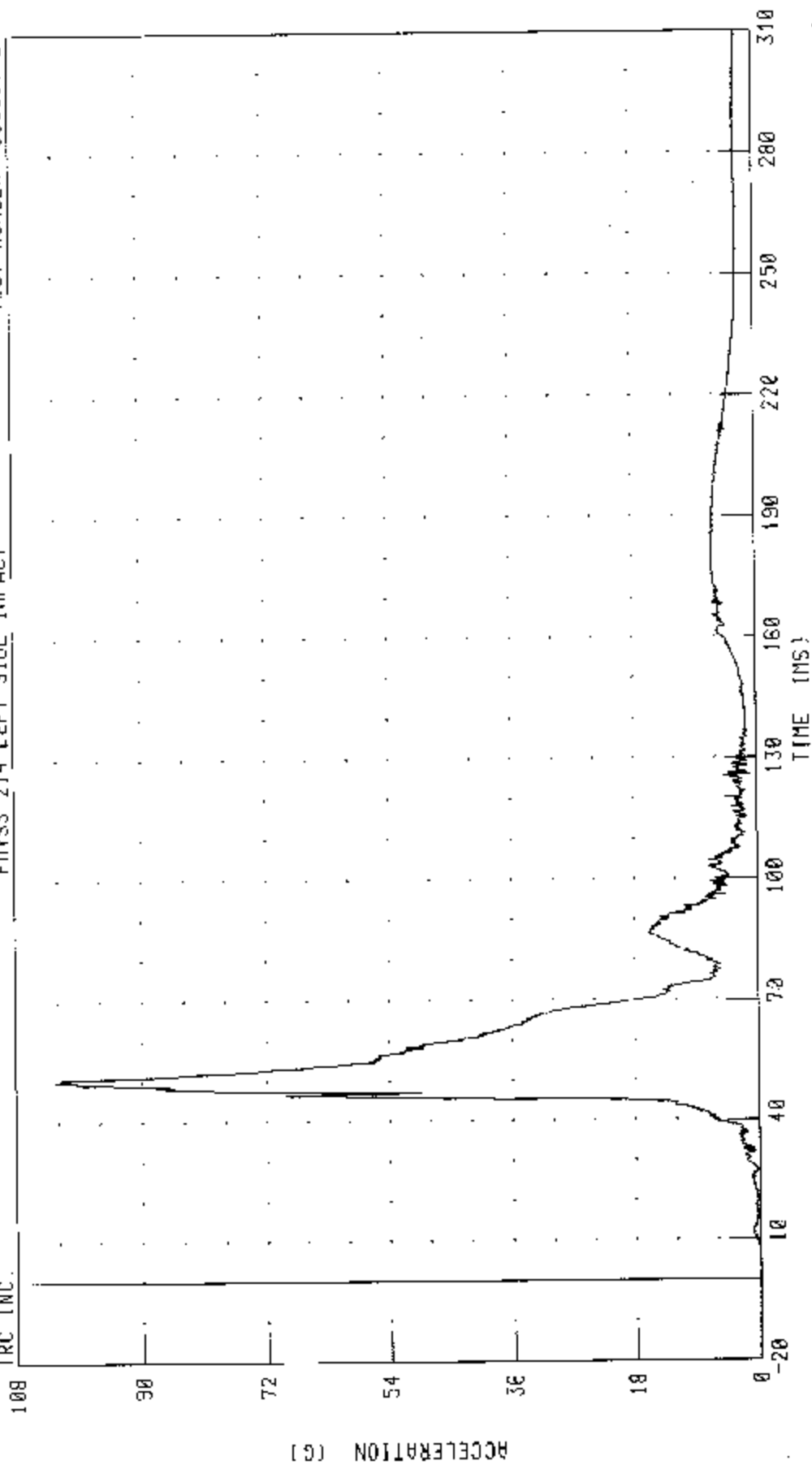
PEAK DATA: 6.92 KM/H @ 53.12 MS, -12.78 KM/H @ 78.40 MS

CHANNEL: HEDZV4 FILTER: CH. CLASS 180

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER HEAD RESULTANT ACCELERATION

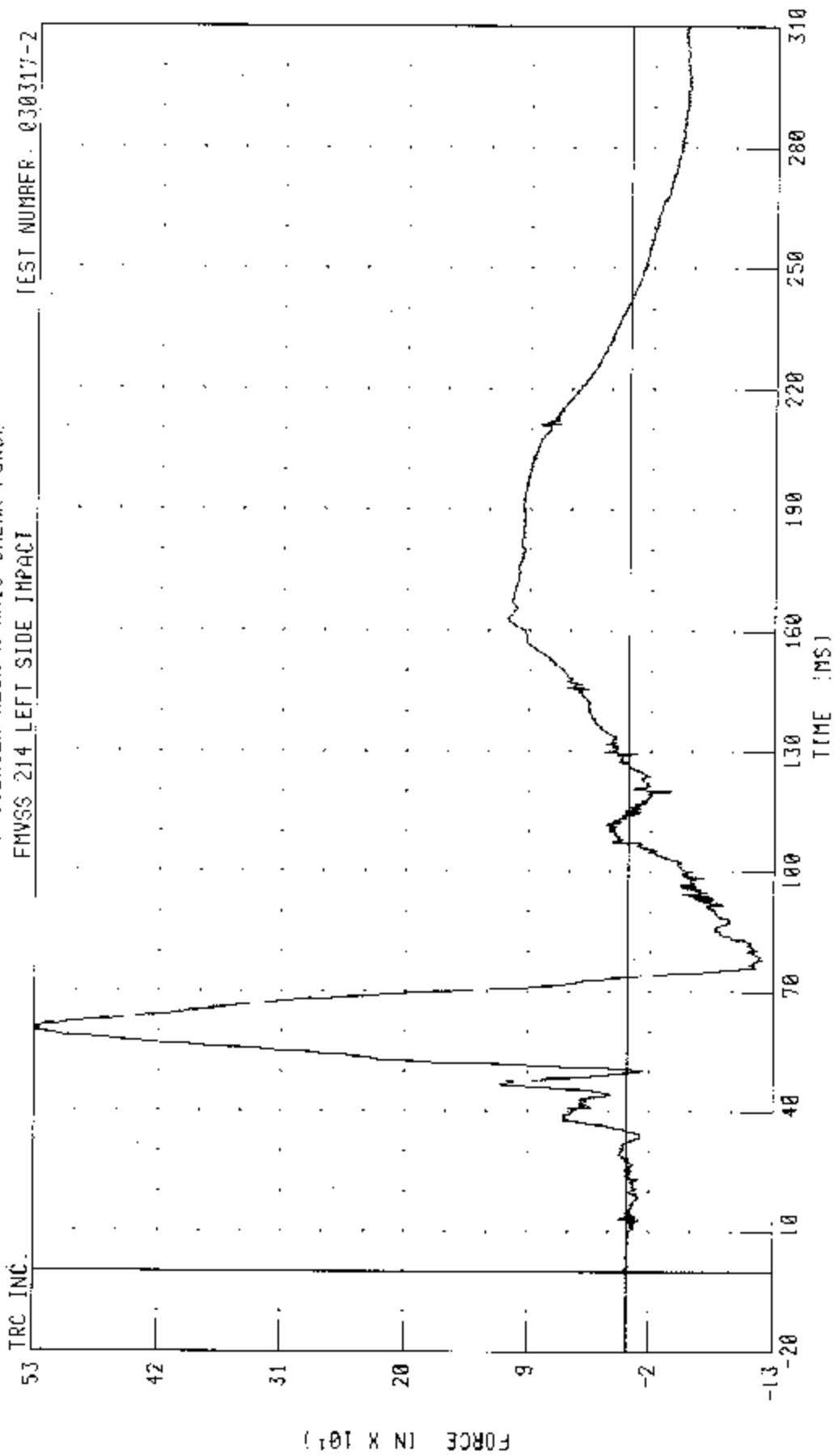
TRC INC. FVSS 214 LEFT SIDE IMPACT TEST NUMBER: 030317-2



PEAK DATA 102 18 G 50.24 MS; 0.01 G 0 -19.84 MS

CHANNEL: HEDRC4 FILTER: CH CLASS 1000

55/28 KPII 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 LEFT REAR PASSENGER NECK X-AXIS SHEAR FORCE



C-CHANNEL: NEKXH-1 FILTER: CH. CLASS 1200

PEAK DATA 553.80 N @ 61.12 MS, -119.72 N @ 78.08 MS

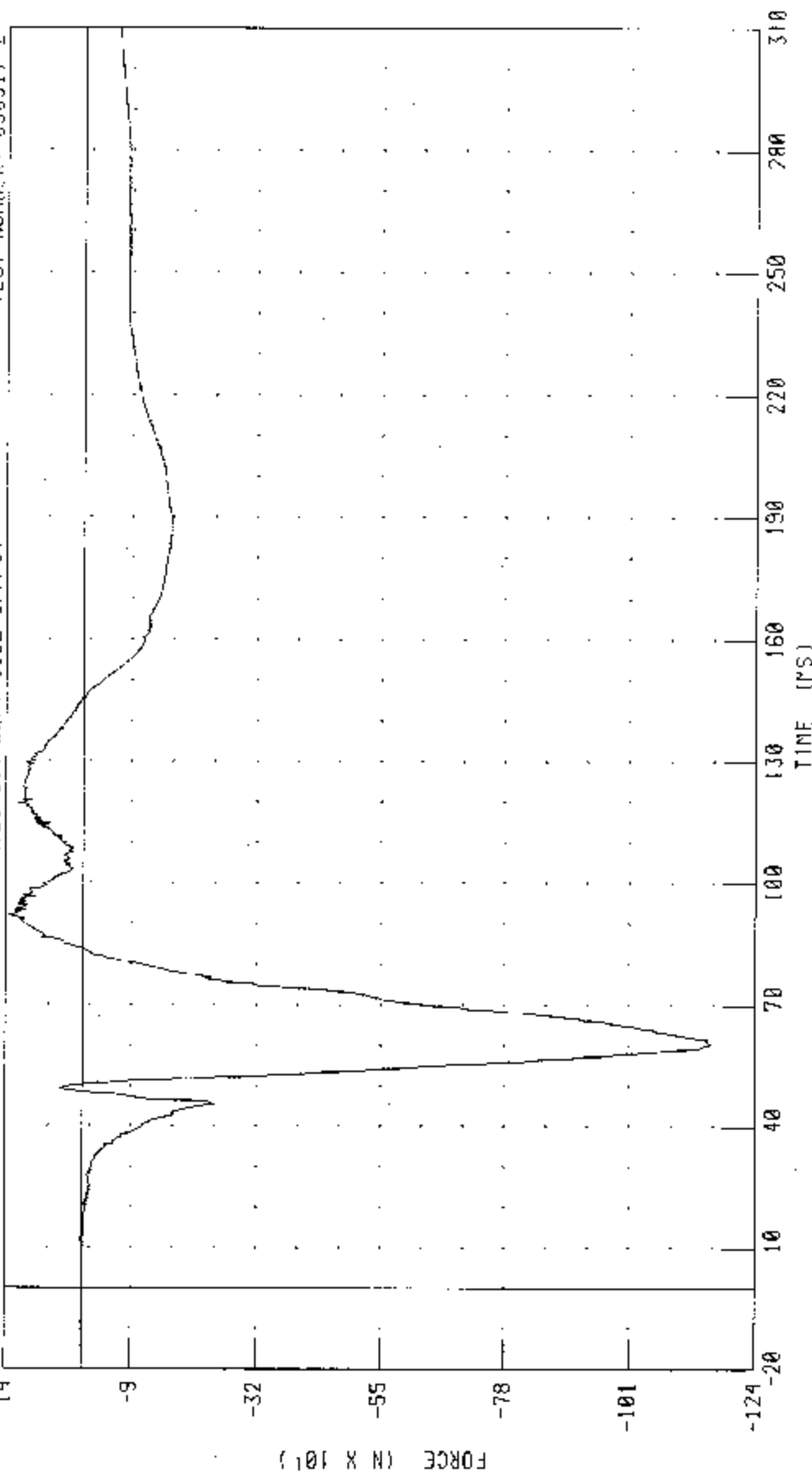
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER NECK Y-AXIS SHEAR FORCE

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

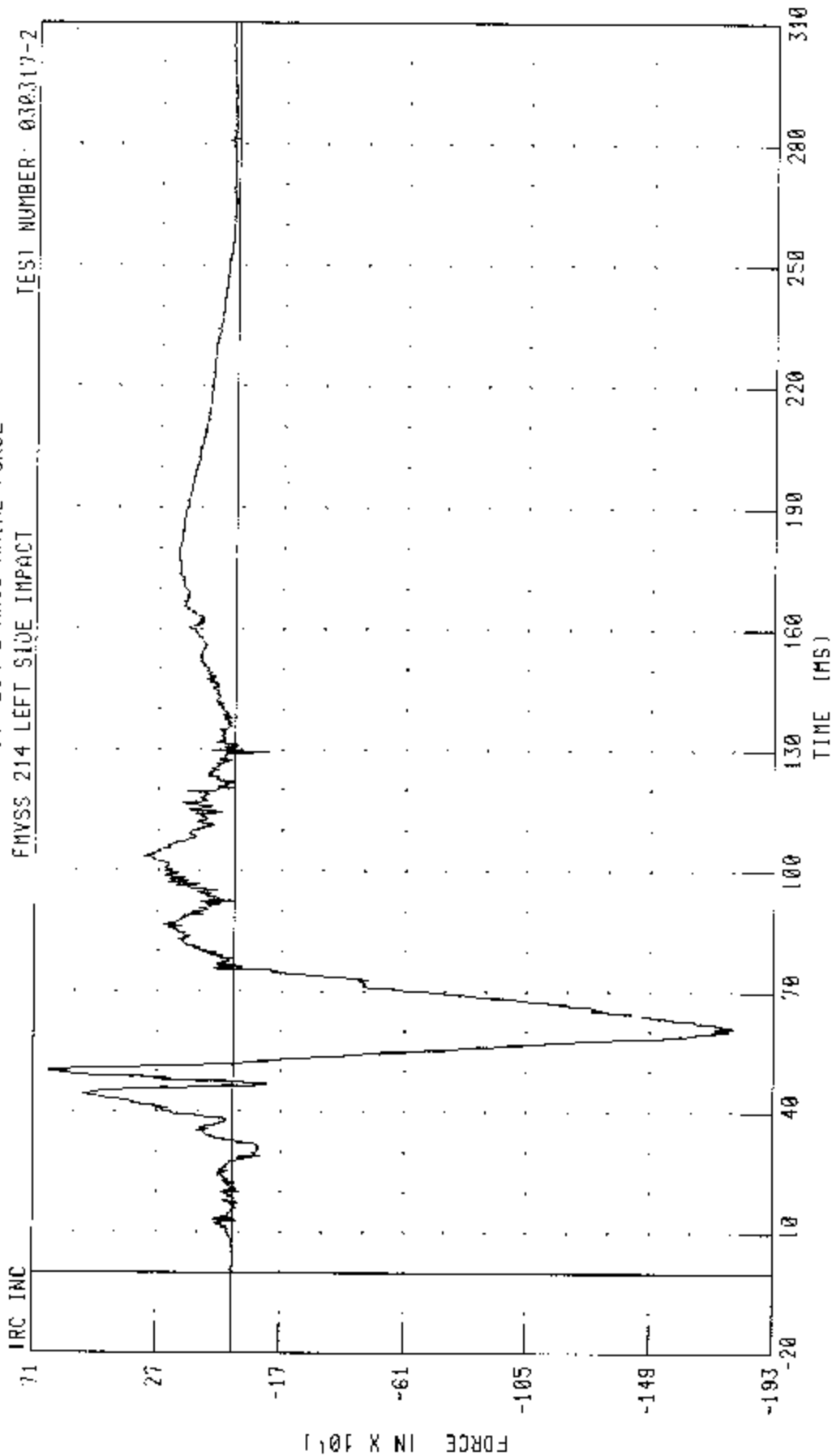
TEST NUMBER: 030317-2



CHANNEL: NEKYF4 FILTER: CH CLASS 1000

PEAK DATA: 134.88 N @ 92.24 MS; -1159.21 N @ 60.48 MS

55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 LEFT REAR PASSENGER NECK Z-AXIS AXIAL FORCE



CHANNEL: NEKZF4 FILTER: CH CLASS 1000

PEAK DATA: 653.27 N @ 50.24 MS, -1768.62 N @ 61.04 MS



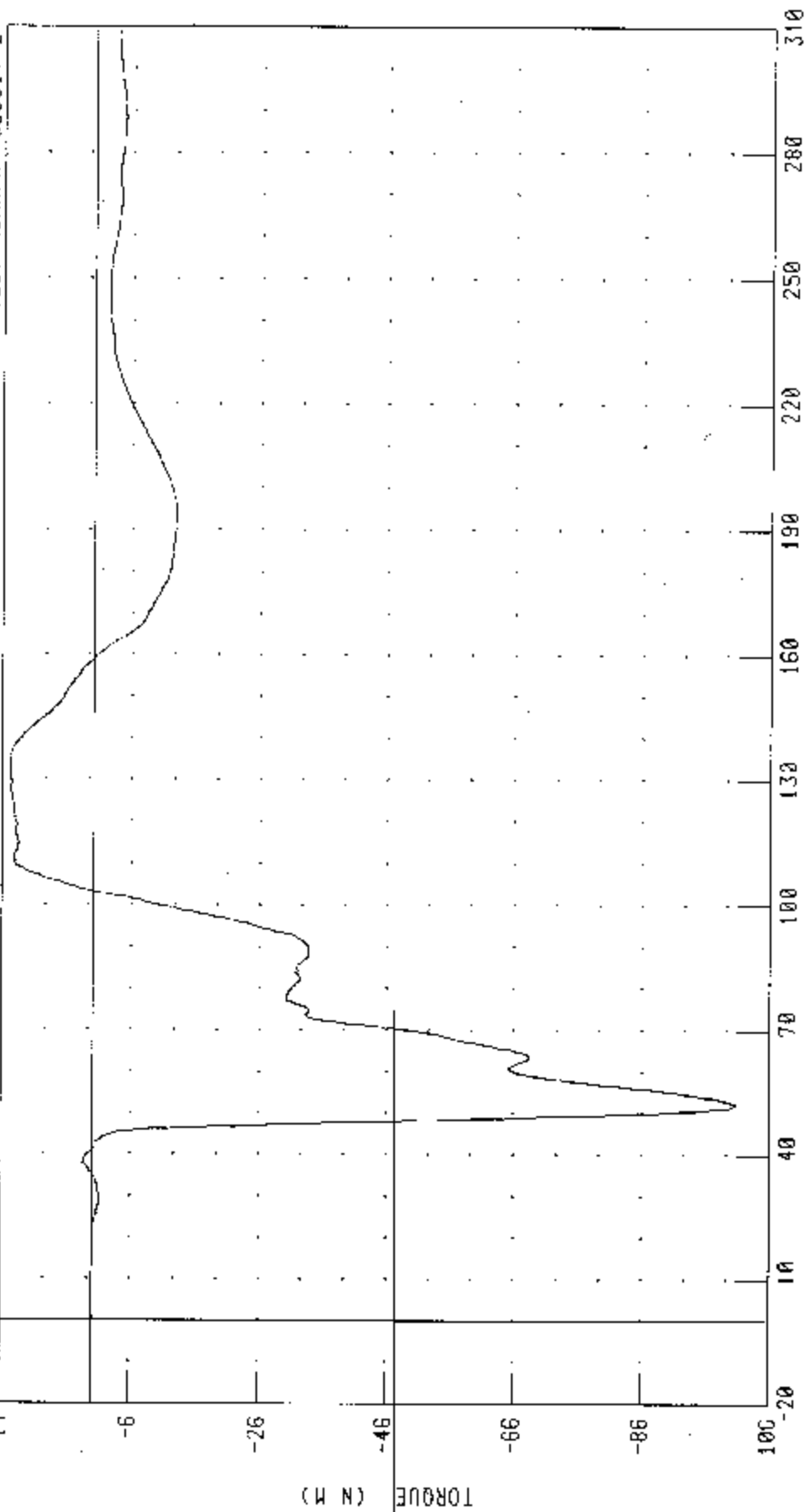
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA6

LEFT REAR PASSENGER NECK MOMENT ABOUT X AXIS

TEST NUMBER: 030317-2

FMVSS 214 LEFT SIDE IMPACT

14 TRC INC.



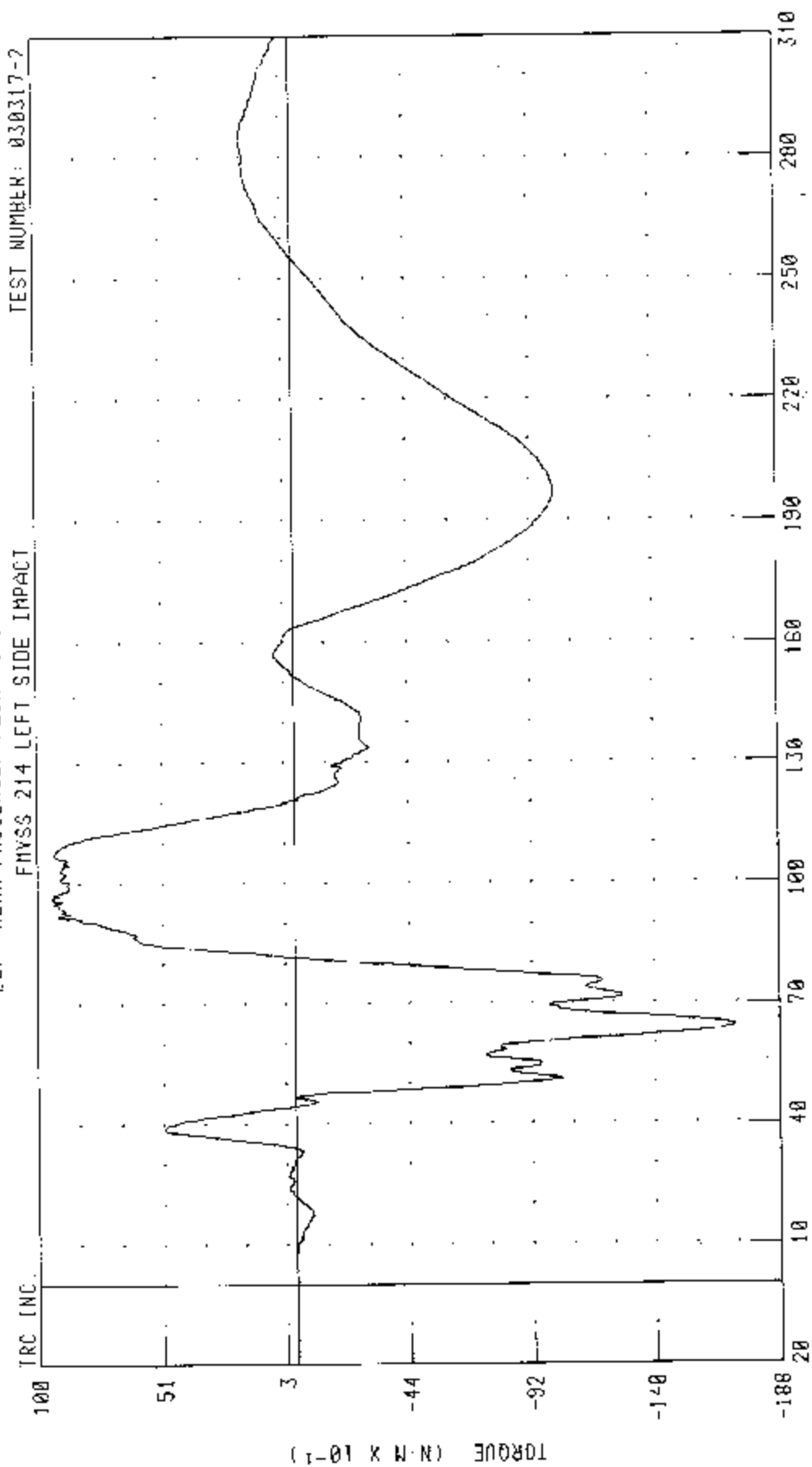
TIME (MS)

CHANNEL: NEKXN2 FILTER: CH. CLASS 600

PEAK DATA 12 03 N M @ 133 04 MS; -100 84 N M @ 52 16 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER NECK MOMENT ABOUT Y AXIS



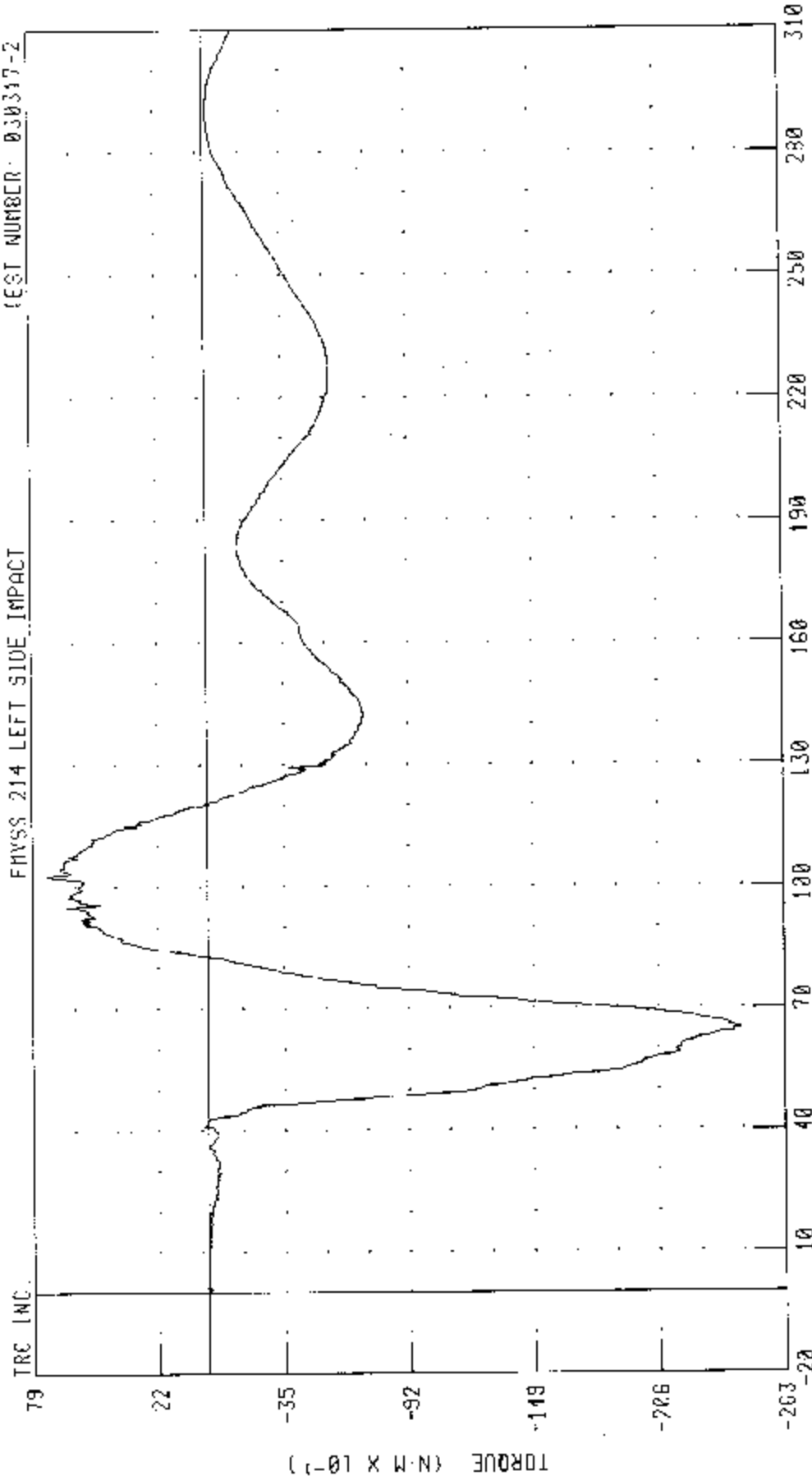
PEAK DATA 9 45 N M @ 96 40 MS, -17.12 N M @ 64 40 MS

CHANNEL: NEKYM4 FILTER: CH. CLASS 600

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 LEFT REAR PASSENGER NECK MOMENT ABOUT Z AXIS

TEST NUMBER: 030317-2

PHYSS 214 LEFT SIDE IMPACT

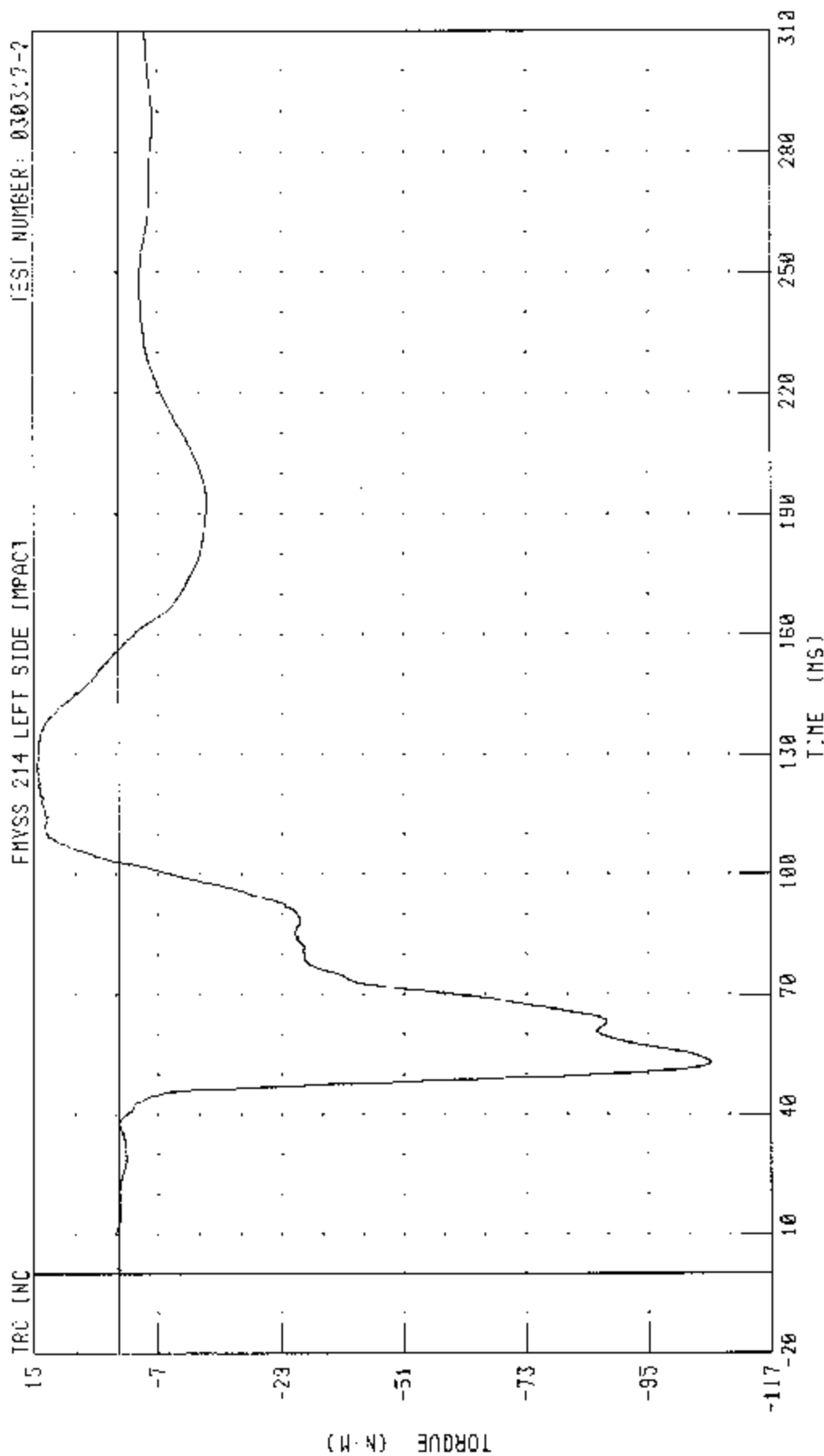


CHANNEL: NEKZM4 FILTER: CH. CLASS 600  
 PEAK DATA: 7 20 N-M @ 102 72 MS, -24 32 N-M @ 65 04 MS

55.78 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER: MID LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER NECK OCCUPANTAL CONDOYLE MOMENT ABOUT X AXIS

FMVSS 214 LEFT SIDE IMPACT TEST NUMBER: 030317-2



030317-2

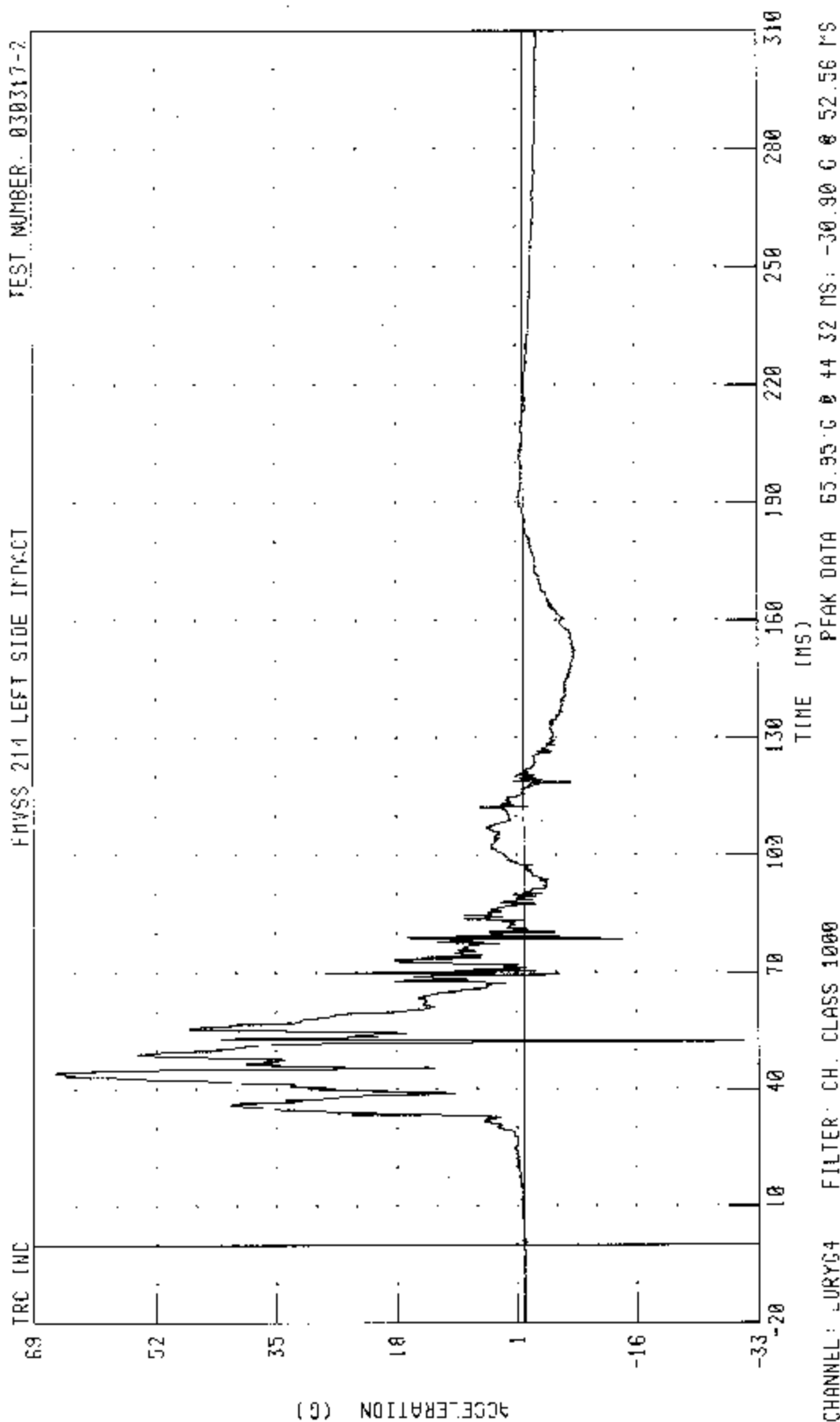
B-45

CHANNEL: NK0XM4 FILTER: CHL CLASS 600

PEAK DATA: 14.46 N-M @ 127.12 MS, -106.23 N-M @ 53.12 MS

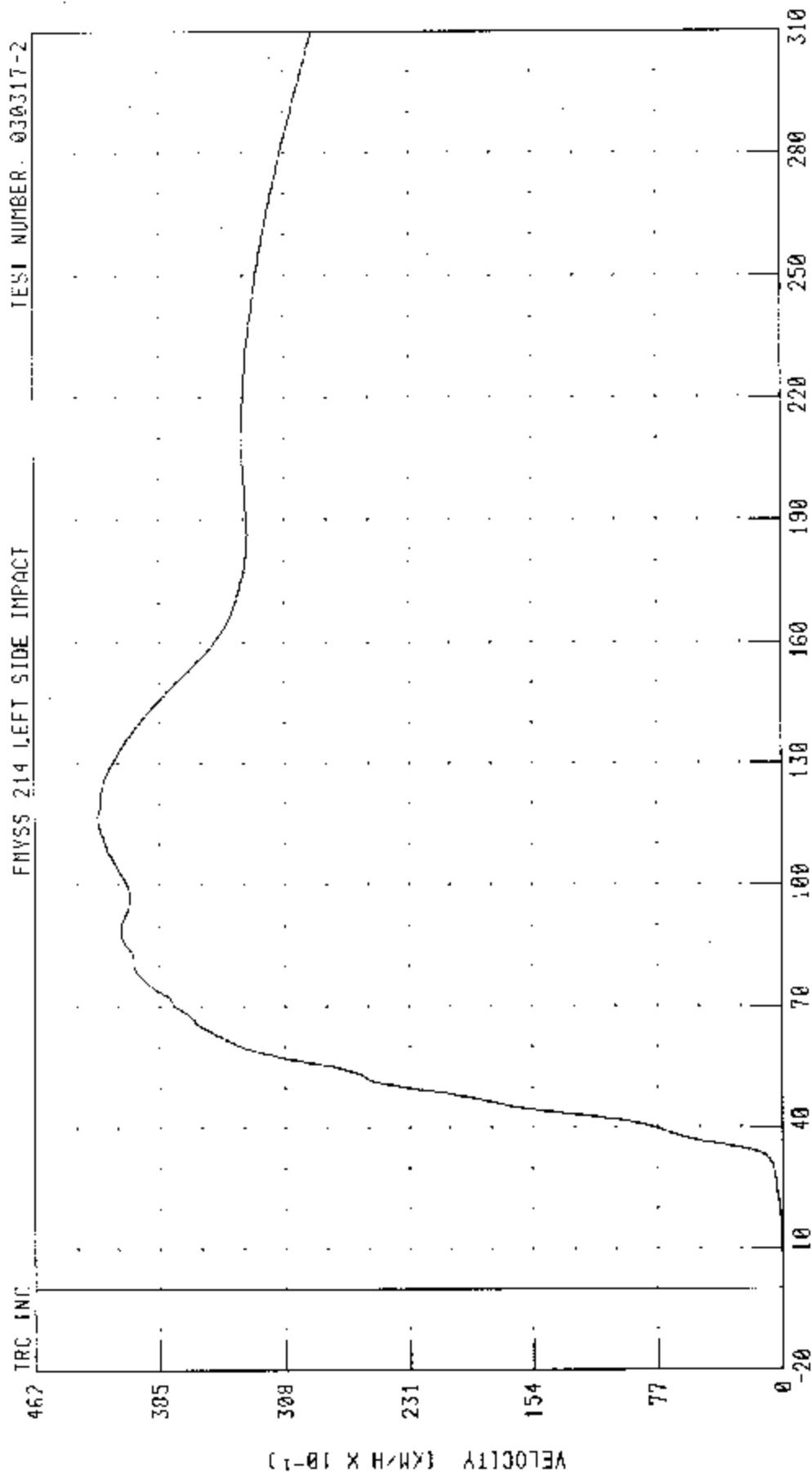
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER UPPER RIB X-AXIS ACCELERATION



55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER: INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER UPPER RIB Y-AXIS VELOCITY



CHANNEL: LURV4 FILTER: CH CLASS 130

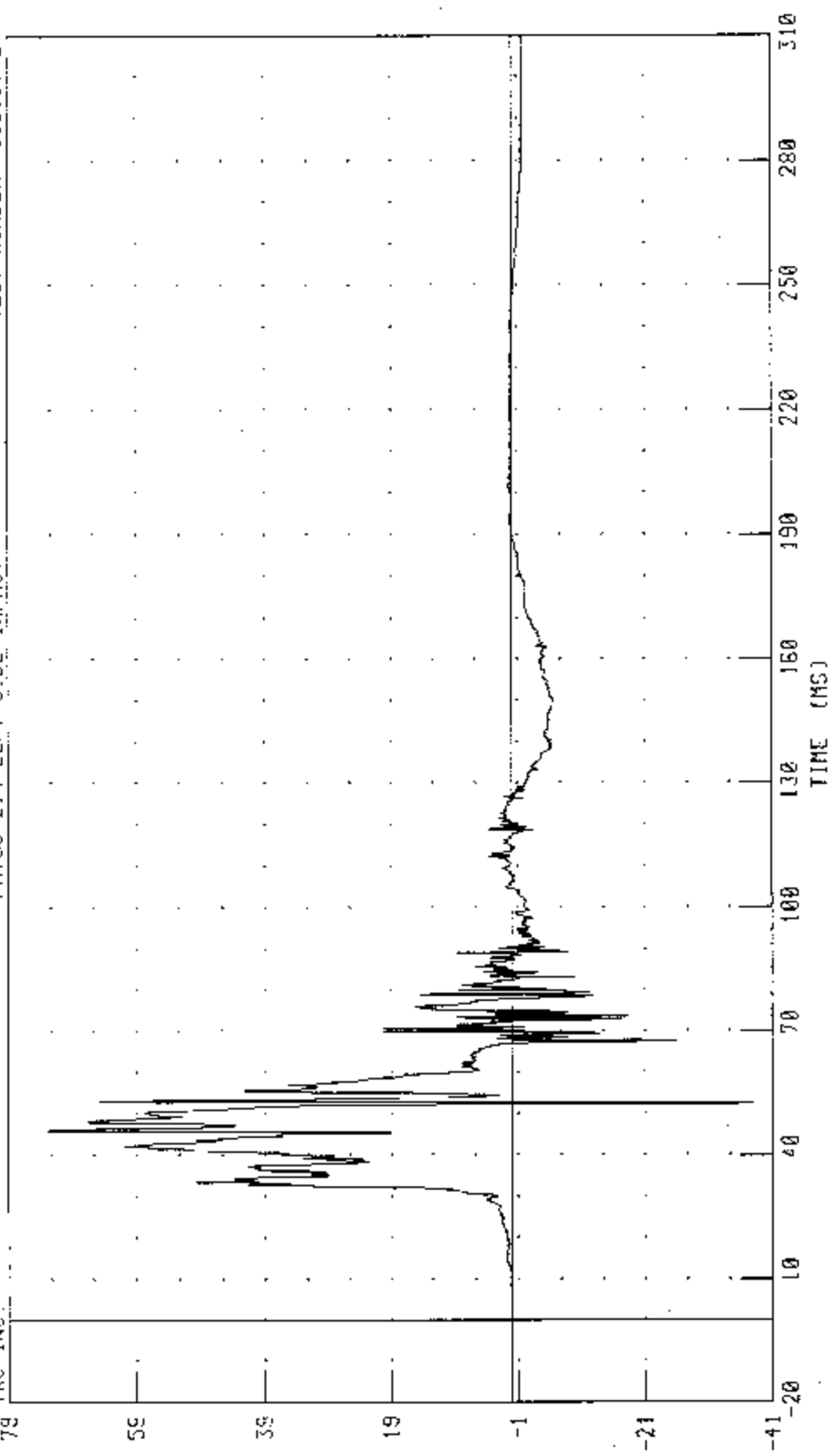
PEAK DATA: 42.29 KM/H @ 116.48 MS; 0.00 KM/H @ 1.20 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 LEFT REAR PASSENGER LOWER 313 Y-AXIS ACCELERATION

TEST NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT

TRC INC.



ACCELERATION (g)

PEAK DATA: 72.87 G @ 43.93 MS, 37.70 G @ 52.56 MS

CHANNEL: LLRYC4 FILTER: CH CLASS 1000

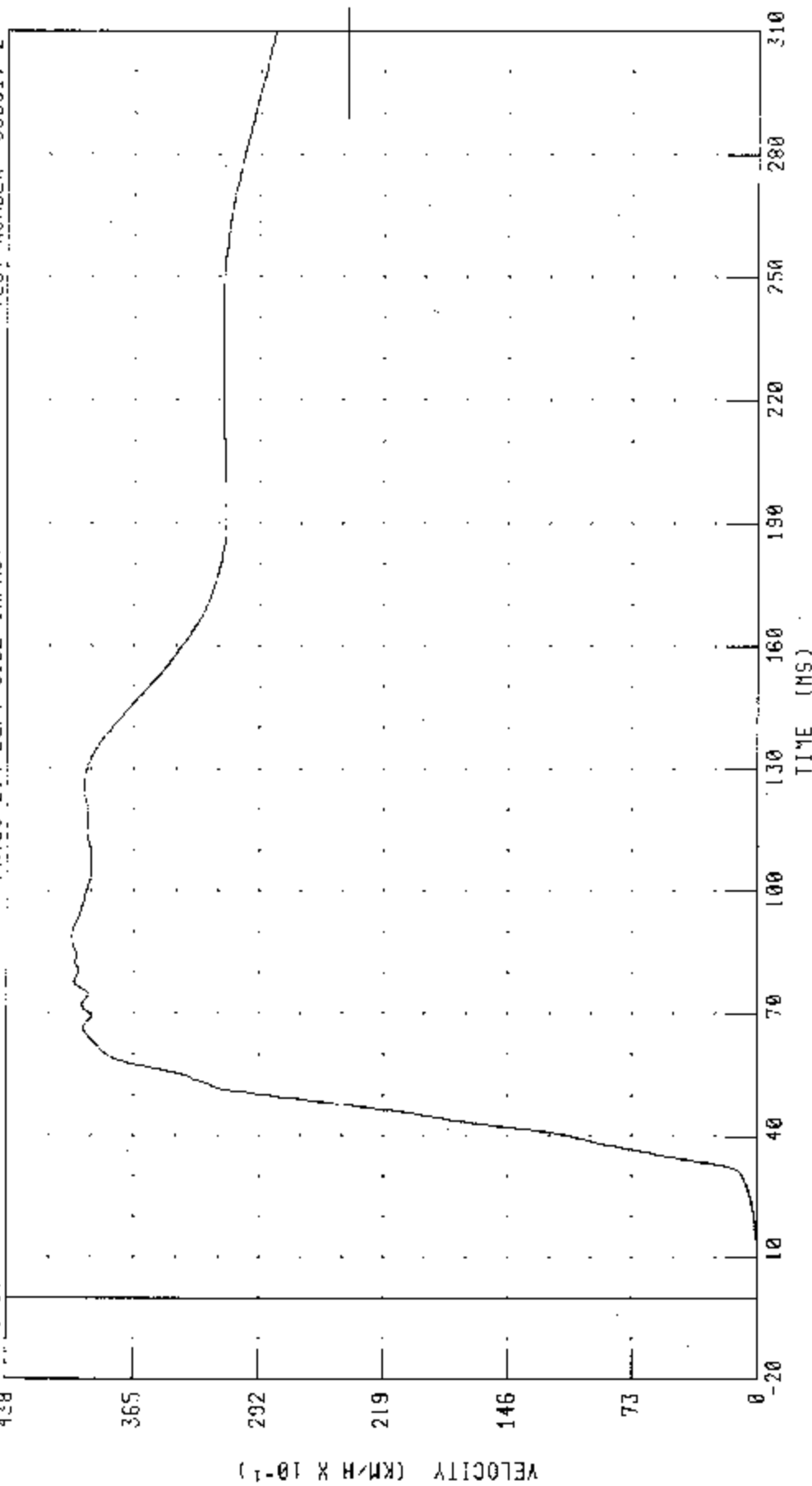
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER LOWER RIB Y-AXIS VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2



CHANNEL: LLRYV4 FILTER: CH. CLASS 100

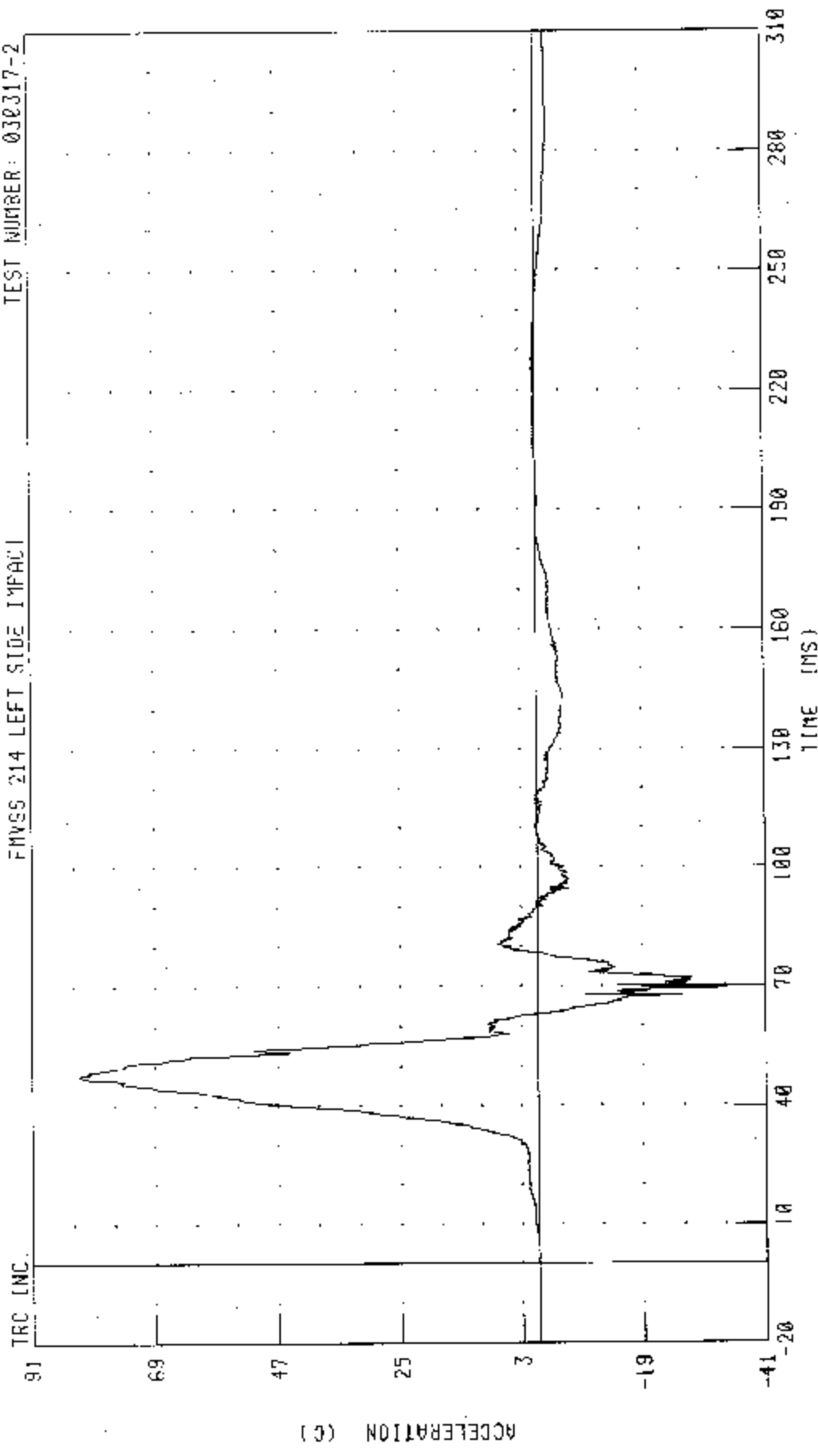
PEAK DATA: 40 28 KM/H @ 89 12 MS, 0 00 KM/H @ 2.00 MS



55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 LEFT REAR PASSENGER LOWER SPINE Y AXIS ACCELERATION

TEST NUMBER: 030317-2

FMVSS 214 LEFT SIDE IMPACT



PEAK DATA: 82.73 G @ 47.60 MS; -37.90 G @ 70.00 MS

CHANNEL: T12VC4 FILTER: CH. CLASS 1000

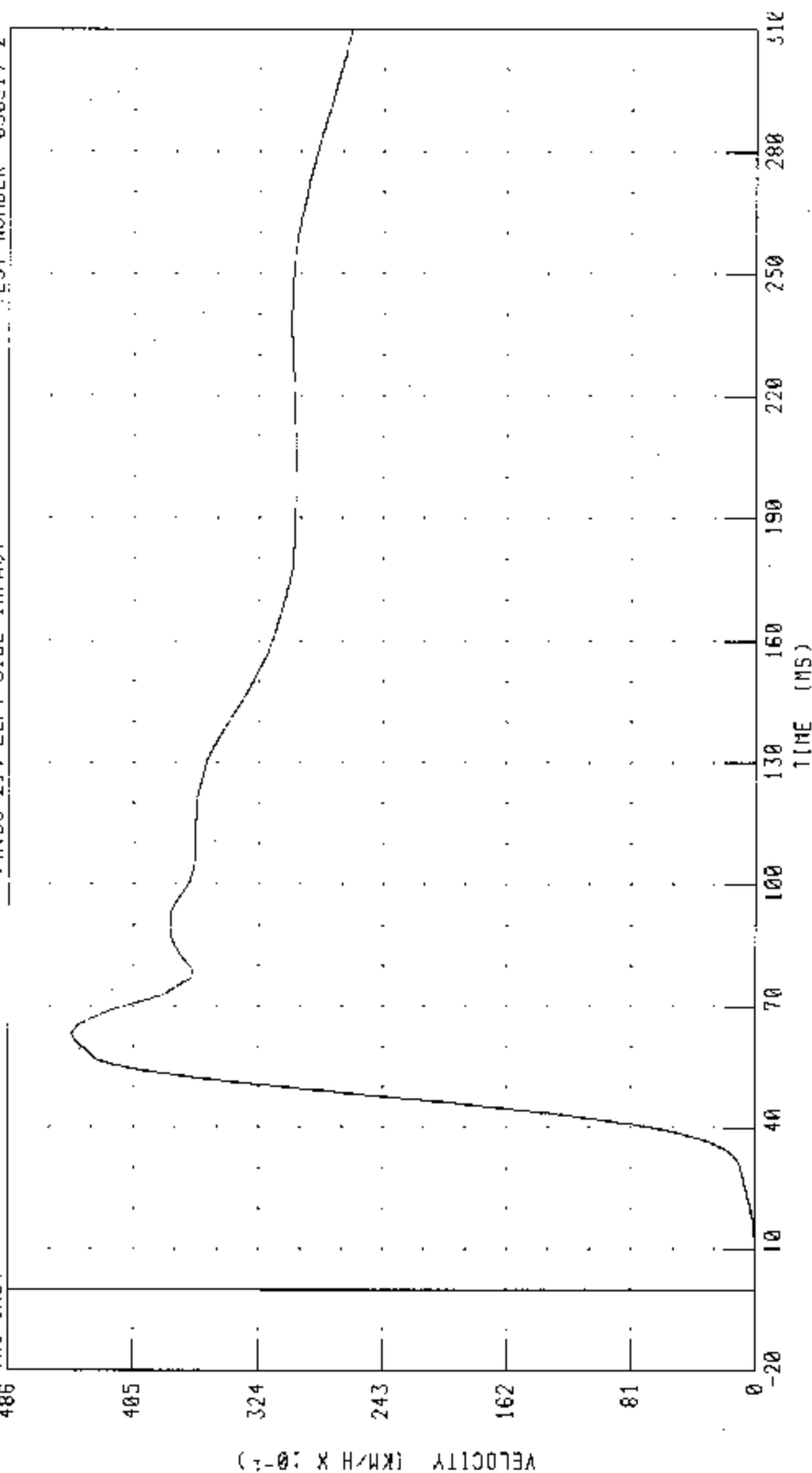
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER LOWER SPINE Y AXIS VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2



TIME (MS)

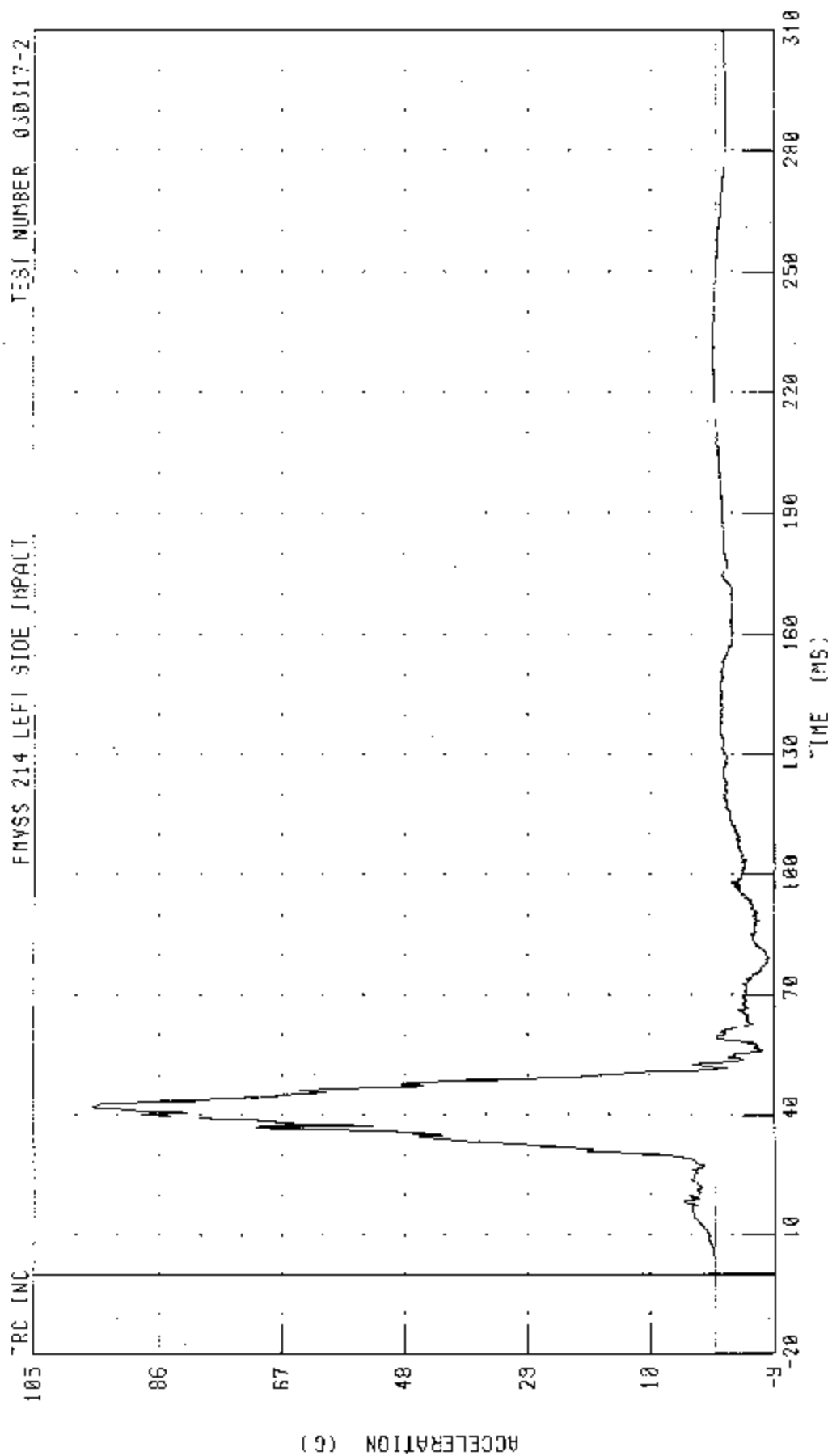
CHANNEL: T12YV4 FILTER CH. CLASS 180

PEAK DATA: 44 49 KM/H @ 33 12 MS, 0 00 KM/H @ 0 00 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFUNABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER PELVIS Y AXIS ACCELERATION

TRC INC FMYSS 214 LEFT SIDE IMPACT TEST NUMBER 030317-2

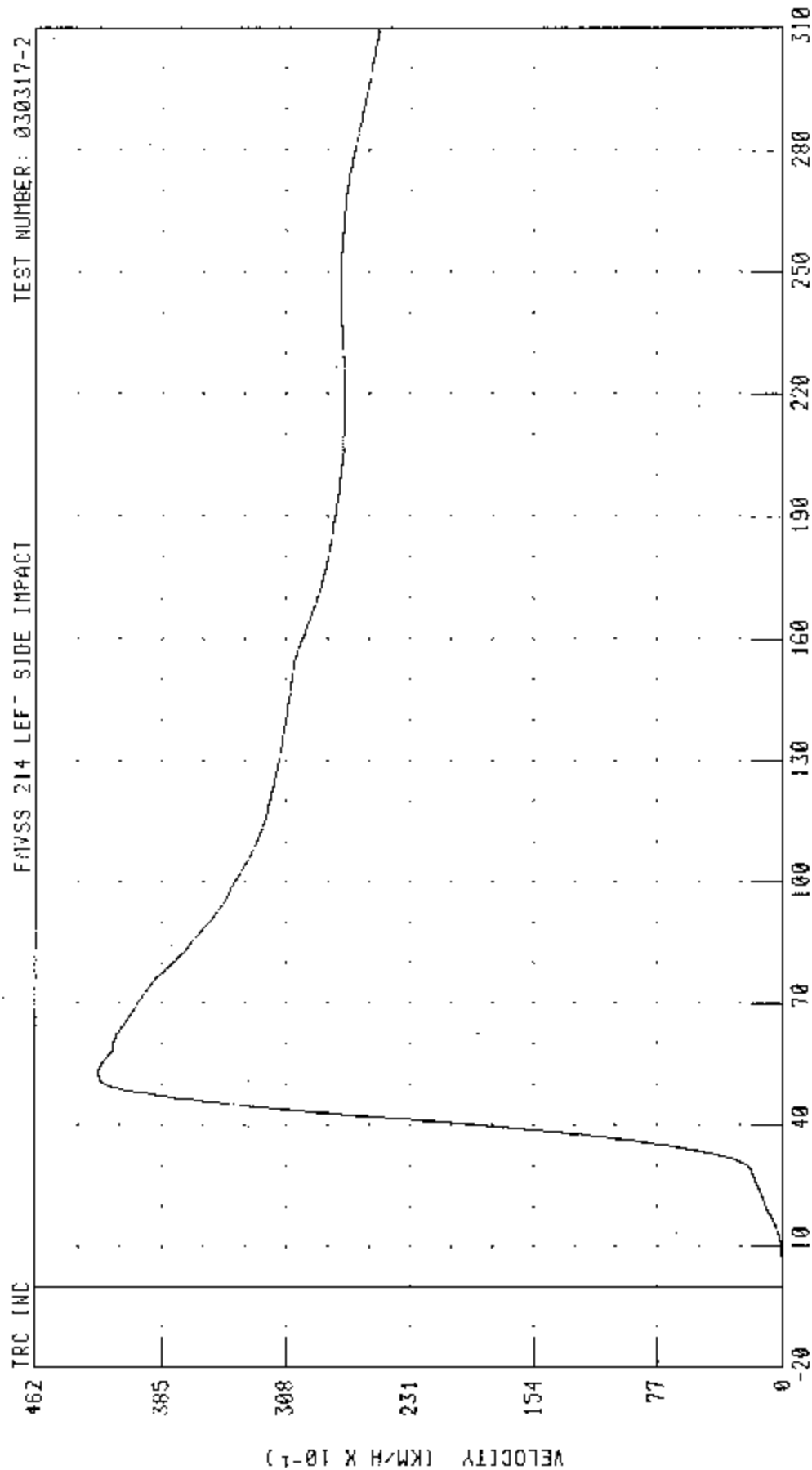


CHANNEL PEVYC4 FILTER CH. CLASS 1000

PEAK DATA: 96.02 G @ 42.08 MS; -8.21 G @ 79.44 MS

55/28 4PH 90 DEGREE SIDE IMPACT (MOVING OFFFORMAR31F BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER PELVIS Y-AXIS VELOCITY



CHANNEL: PEVYY4 FILTER: CH CLASS 180

PEAK DATA: 42.36 KM/H @ 53.04 MS; 0.00 KM/H @ 0.00 MS

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000 - Redundant

Integration Data - Filter Class 180 - Redundant

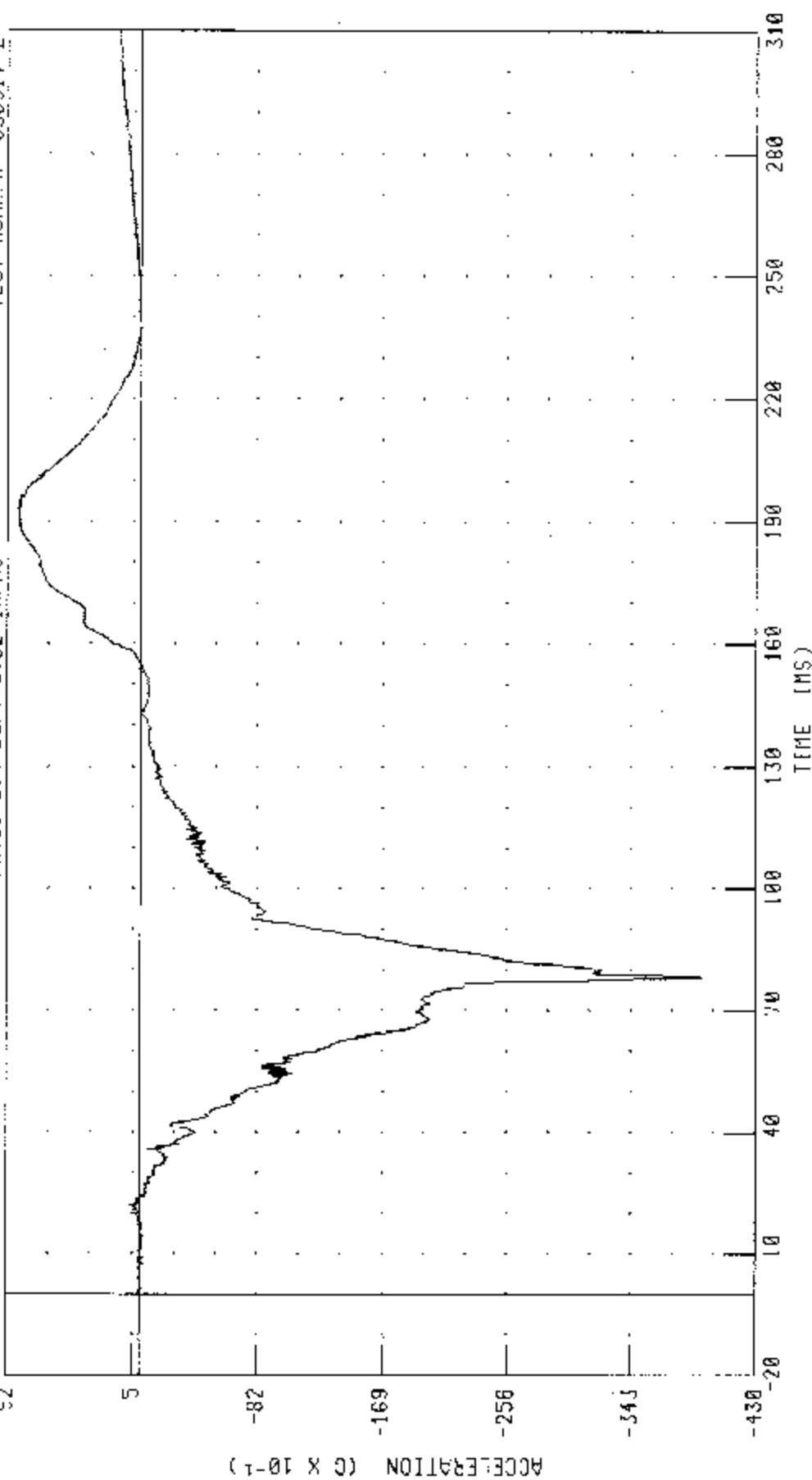
55/28 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 5

DRIVER HEAD X-AXIS REDUNDANT ACCELERATION

IRC INC

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBR. 030317-2



CHANNEL: HEDXR1 FILTER: CHL CLASS 1000

PEAK DATA B 45 G @ 193 36 MS, -39 22 G @ 78 32 MS

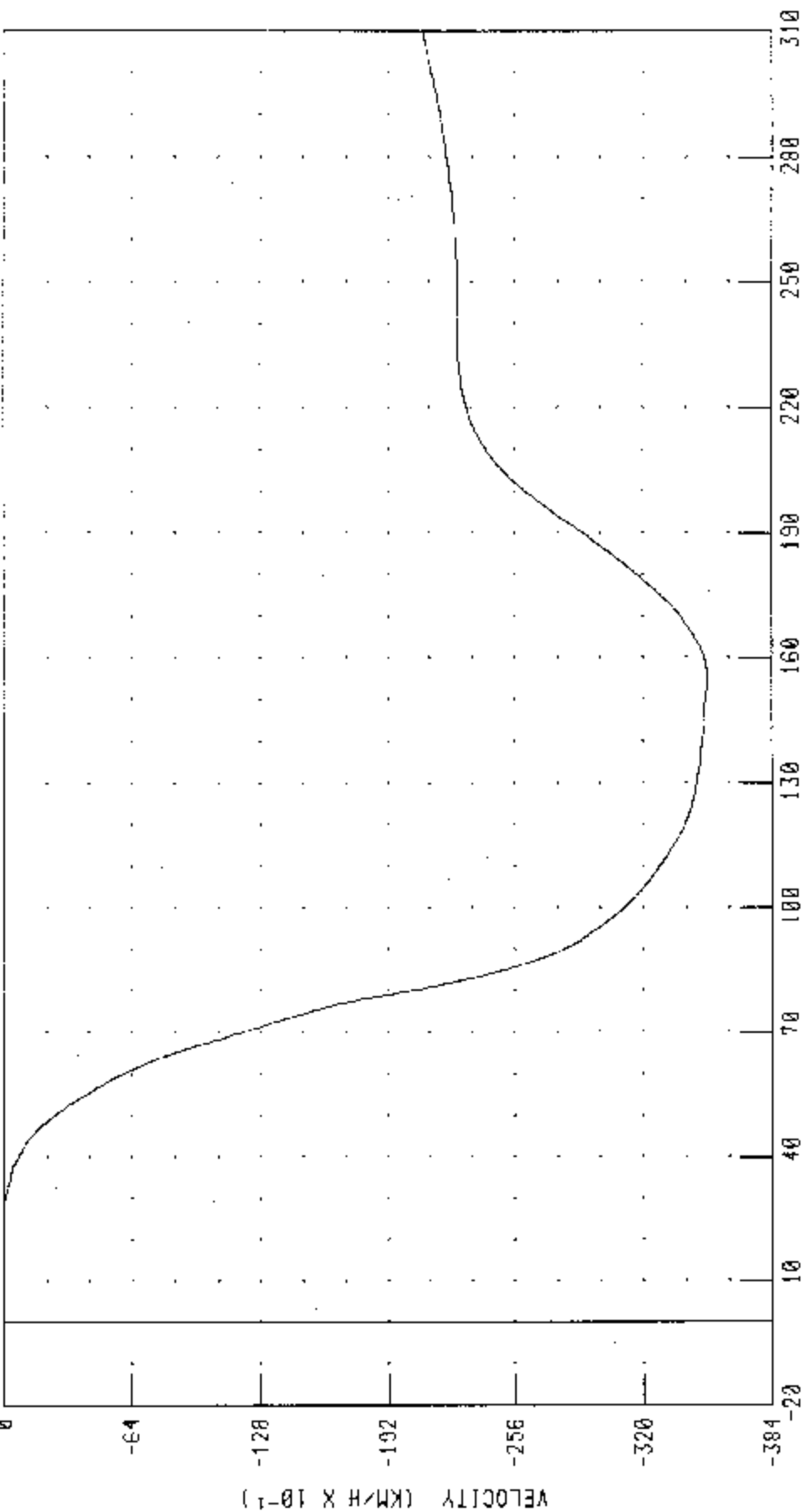
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) (NIO LEFT SIDE OF 2003 MAZDA 6

DRIVER HEAD X AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2

TRC INC.



CHANNEL: HFDXVI FILTER CH. CLASS 180

PEAK DATA: 0 02 KPH 0 23 76 MS; -35 15 KPH 0 155 12 MS

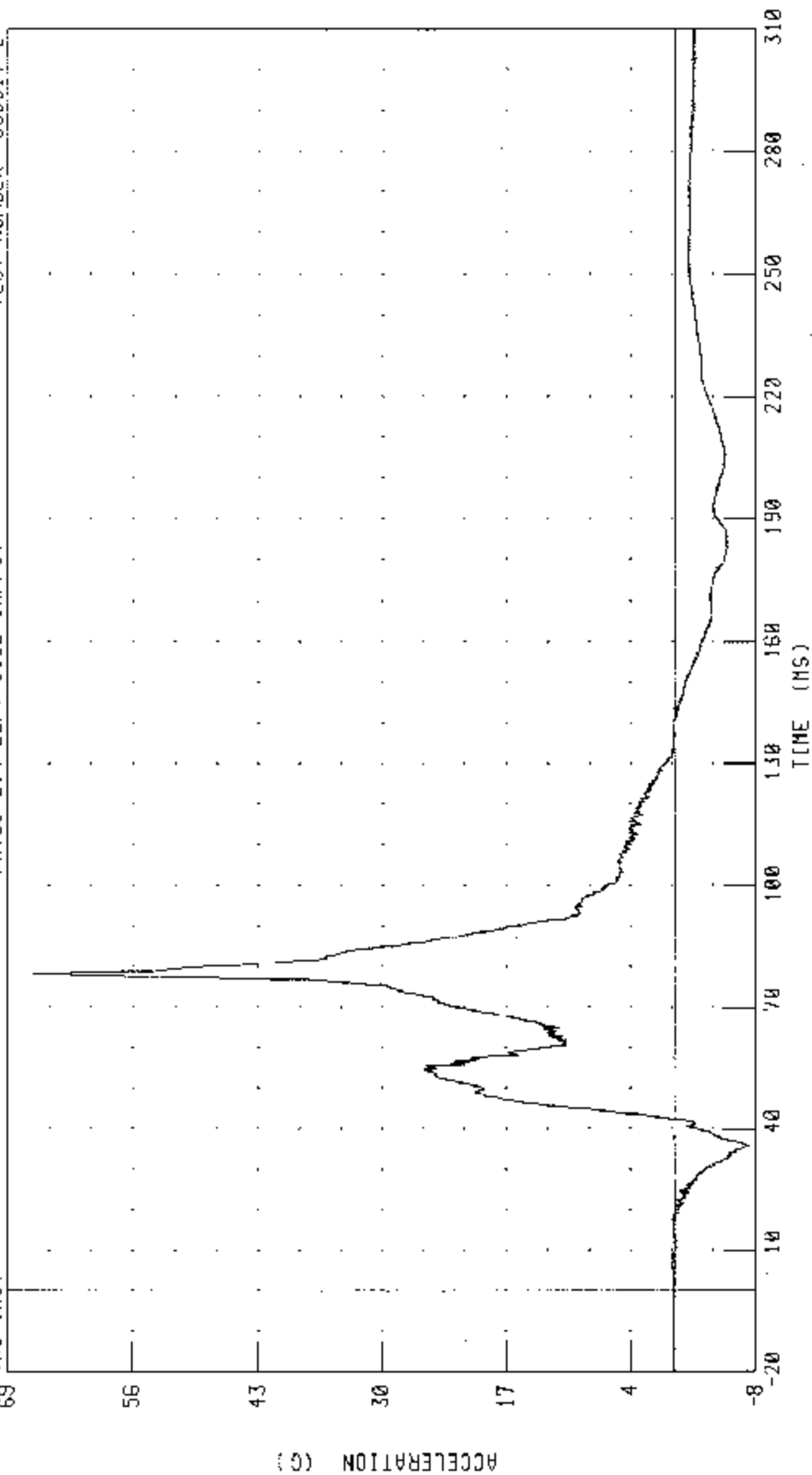
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER HEAD Y-AXIS (ROUND) ACCELERATION

IRC INC.

FRYSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2



CHANNEL HEDVR1 FILTER CH. CLASS 1000

PEAK DATA: 66.82 G @ 78.40 MS, -7.68 G @ 35.84 MS



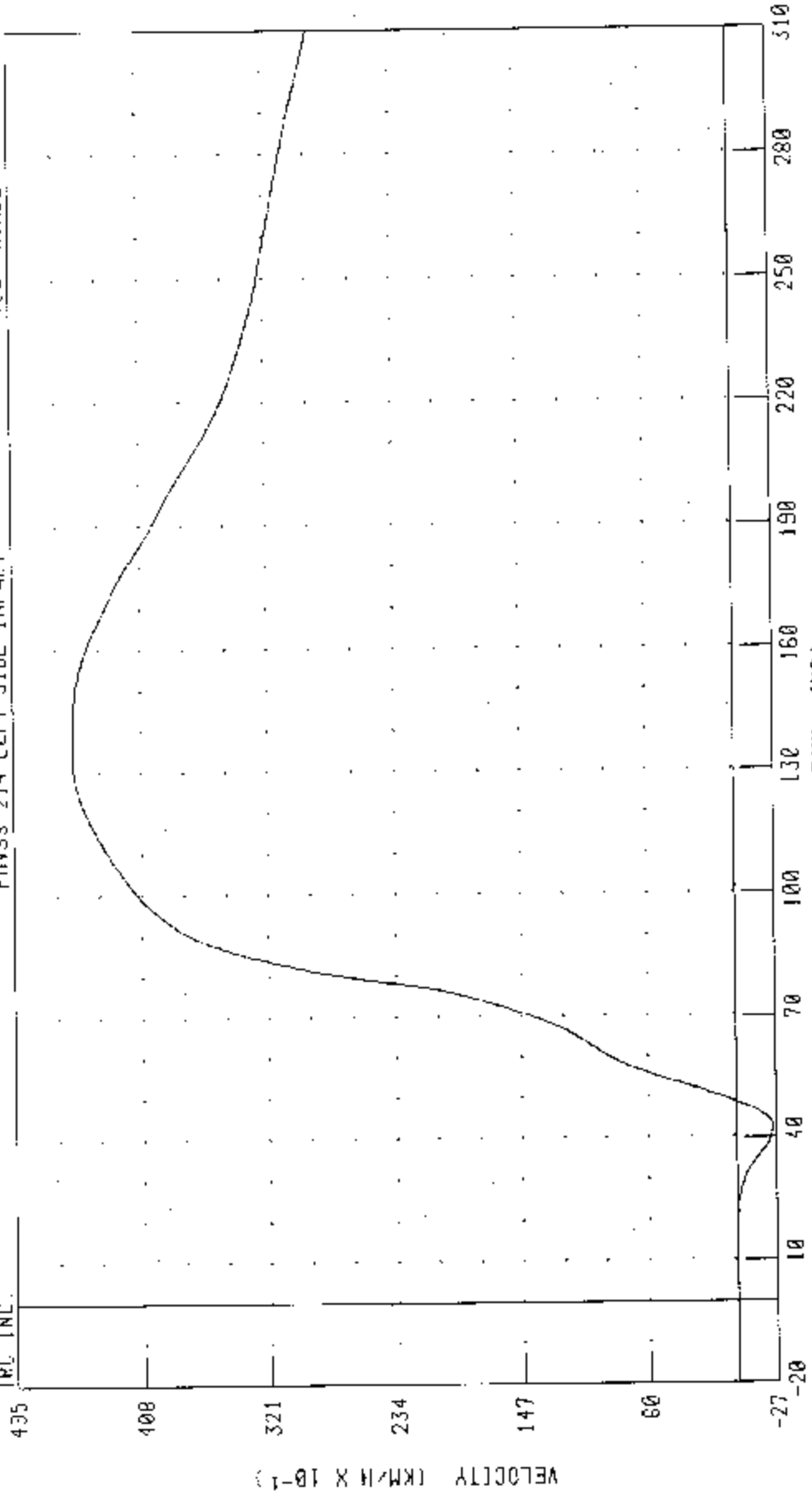
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER HEAD Y AXIS REDUNDANT VELOCITY

TEST NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT

IPC INC.



PEAK DATA: 45.48 KPH @ 133.52 MS; -2.49 KPH @ 42.48 MS

CHANNEL: HEDYVI FILTER: CH CLASS 180

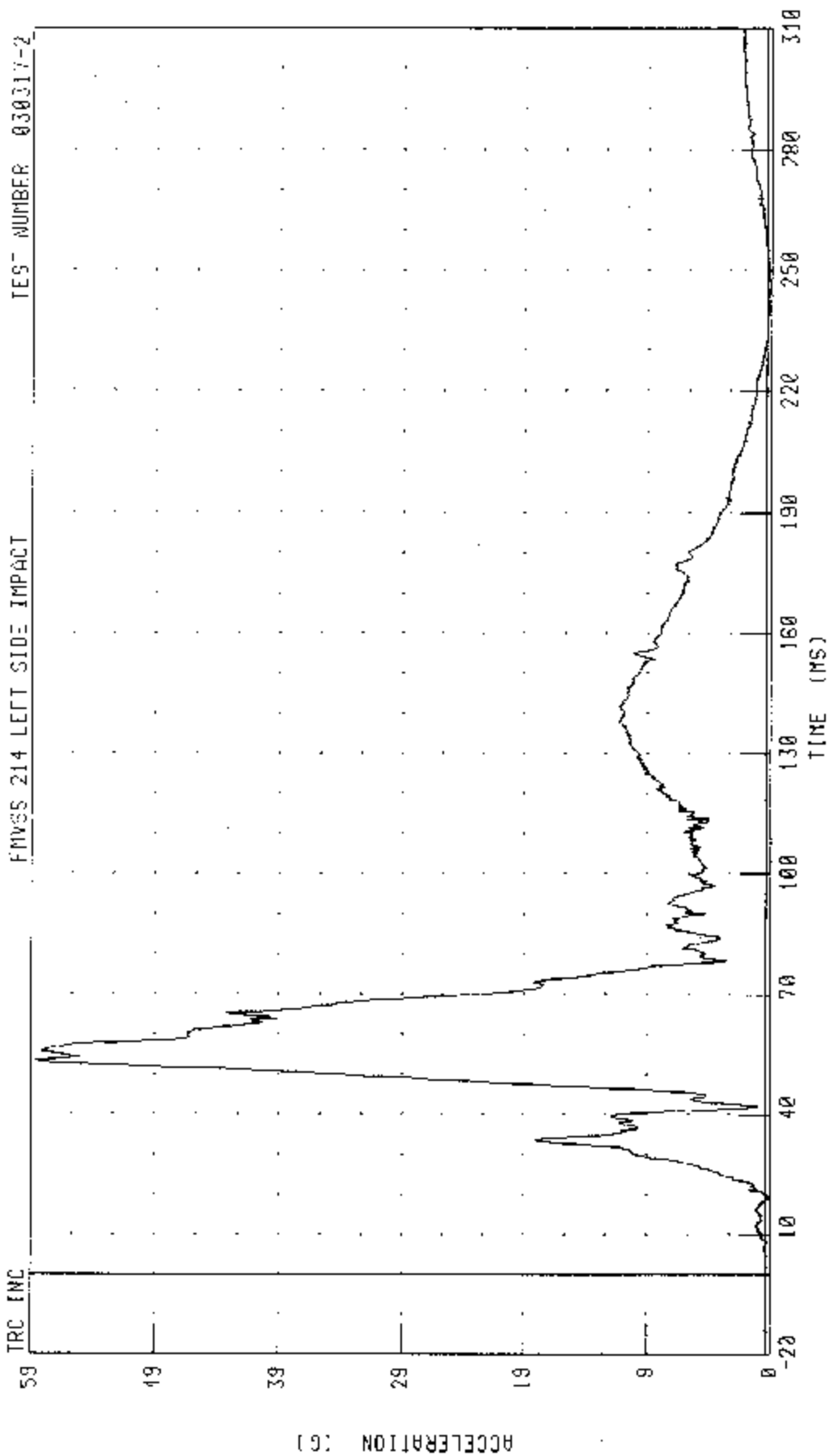
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER HEAD Z-AXIS RESONANT ACCELERATION

TRC INC

FMVSS 214 LEFT SIDE IMPACT

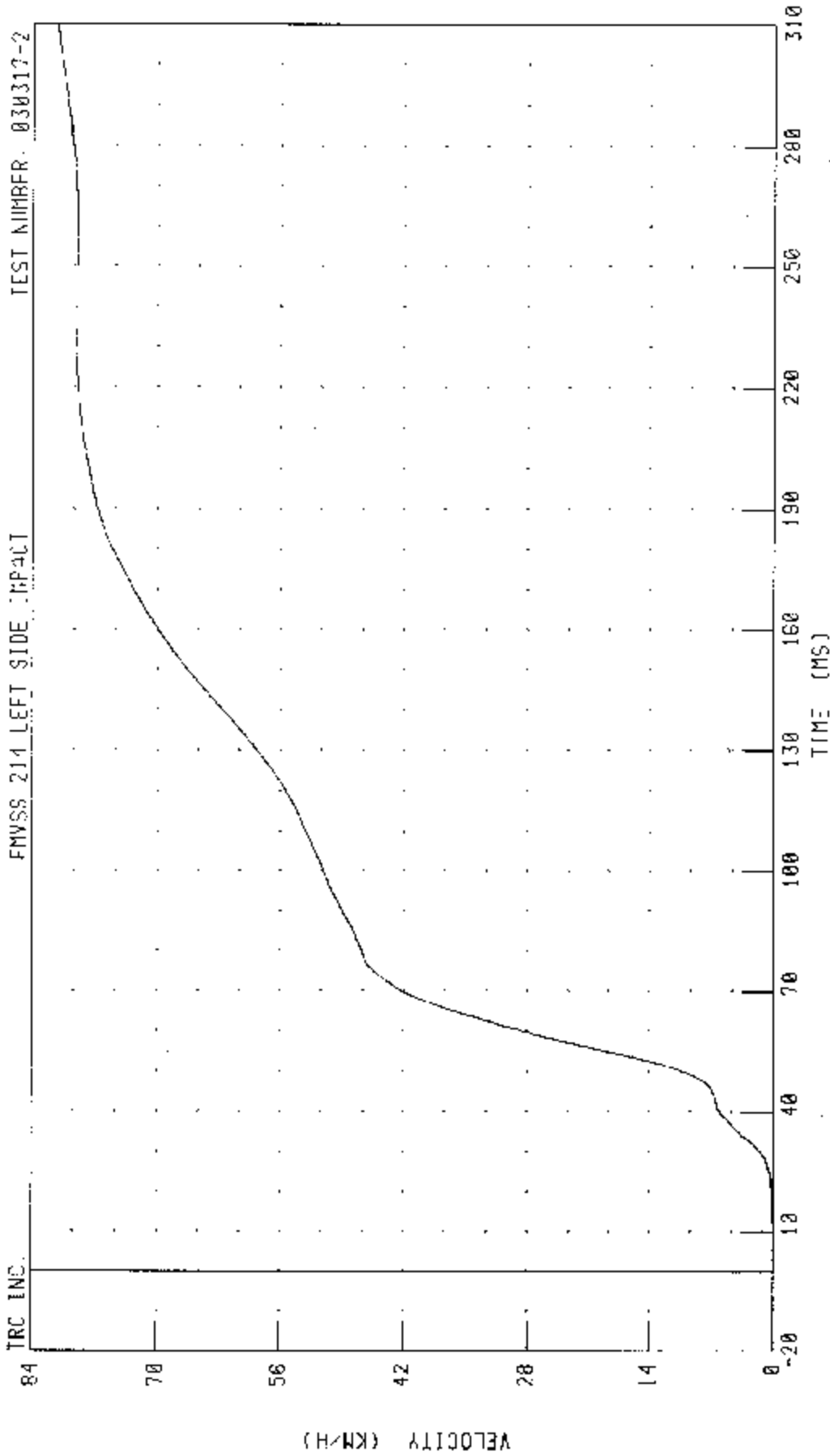
TEST NUMBER 030317-2



CHANNEL: HEADZ1 FILTER: CH. CLASS 1000

PEAK DATA: 59.26 G @ 53.44 MS; -0.38 G @ 240.72 MS

55/28 KPH 90 DEGREE SINF IMPACT (MOVING DEFORMABLE BARRIER) INTO LEP SIDE OF 7003 NAZDA 6  
 DRIVER HEAD Z-AXIS REDUNDANT VELOCITY



CHANNEL HEDZY: FILTER CH. CLASS 180

PEAK DATA: 81.26 KM/H @ 310 00 MS; R 00 KM/H @ 5.60 MS

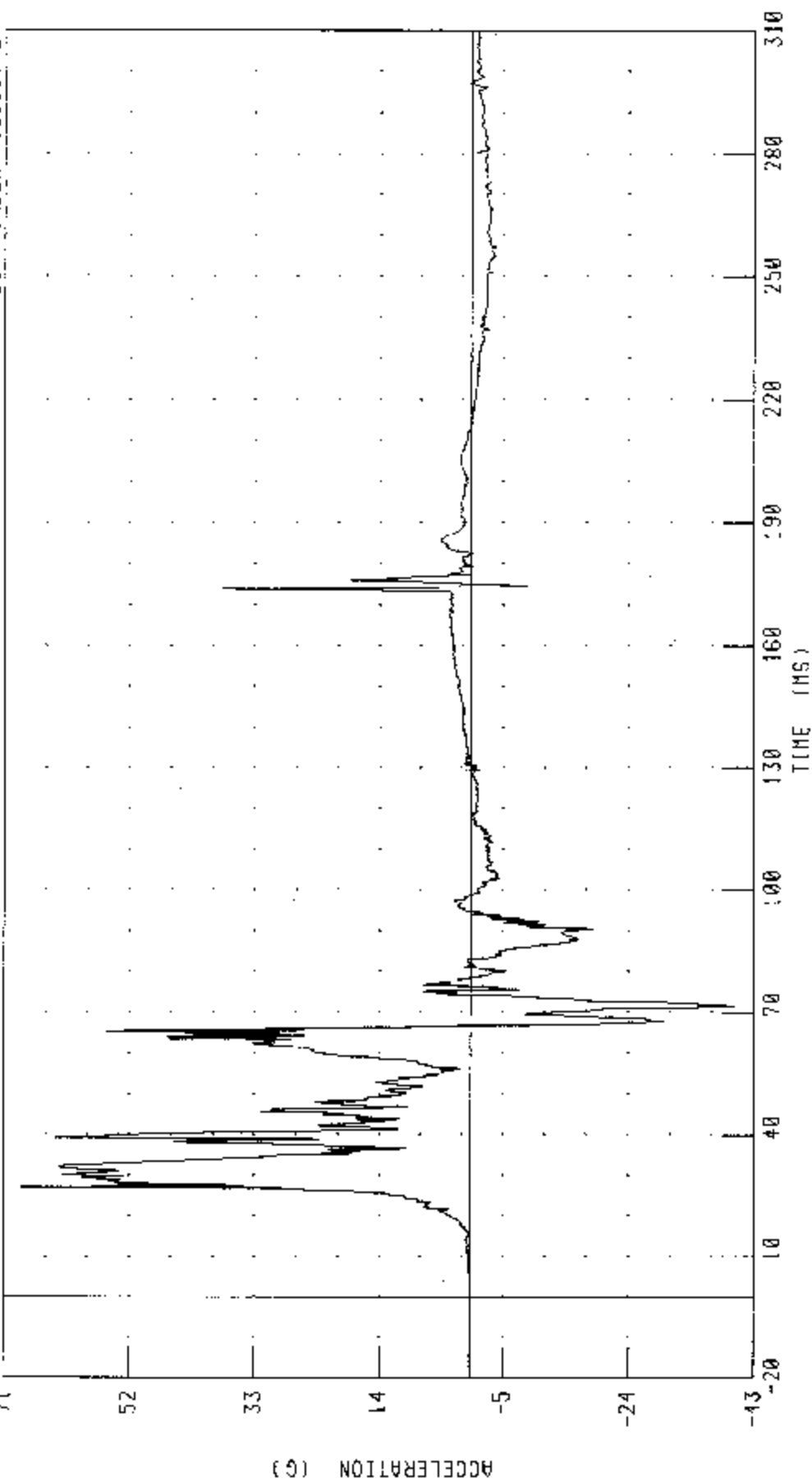
55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 HAZDA 6

DRIVER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

TRC INC.

FVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2



CHANNEL: LUPYR1 FILTER: CH CLASS 1000

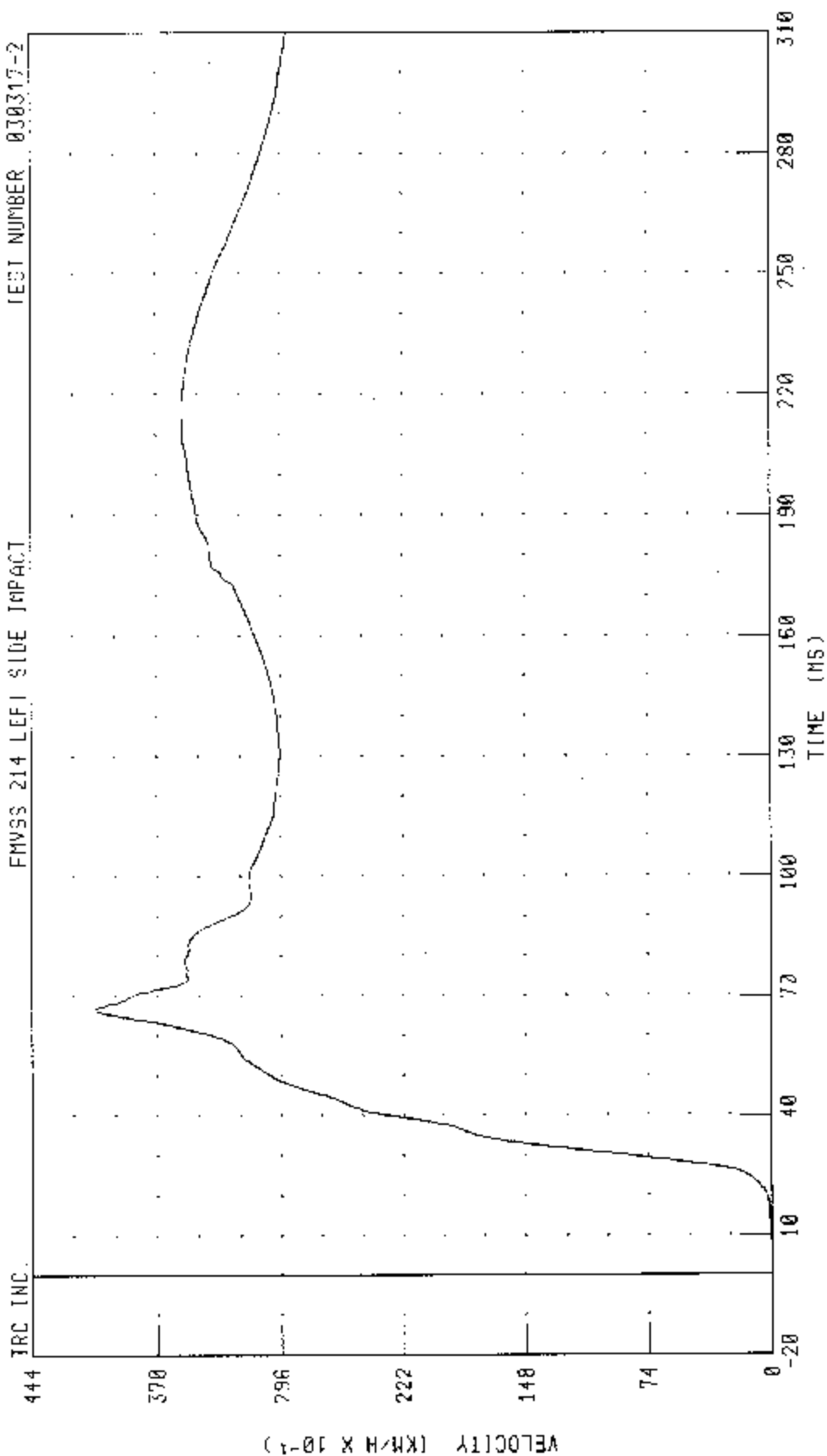
PEAK DATA: 68 30 G @ 27 20 MS, 39.93 G @ 71.60 MS

55/28 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER UPPER R18 Y-AXIS REDUCED VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2

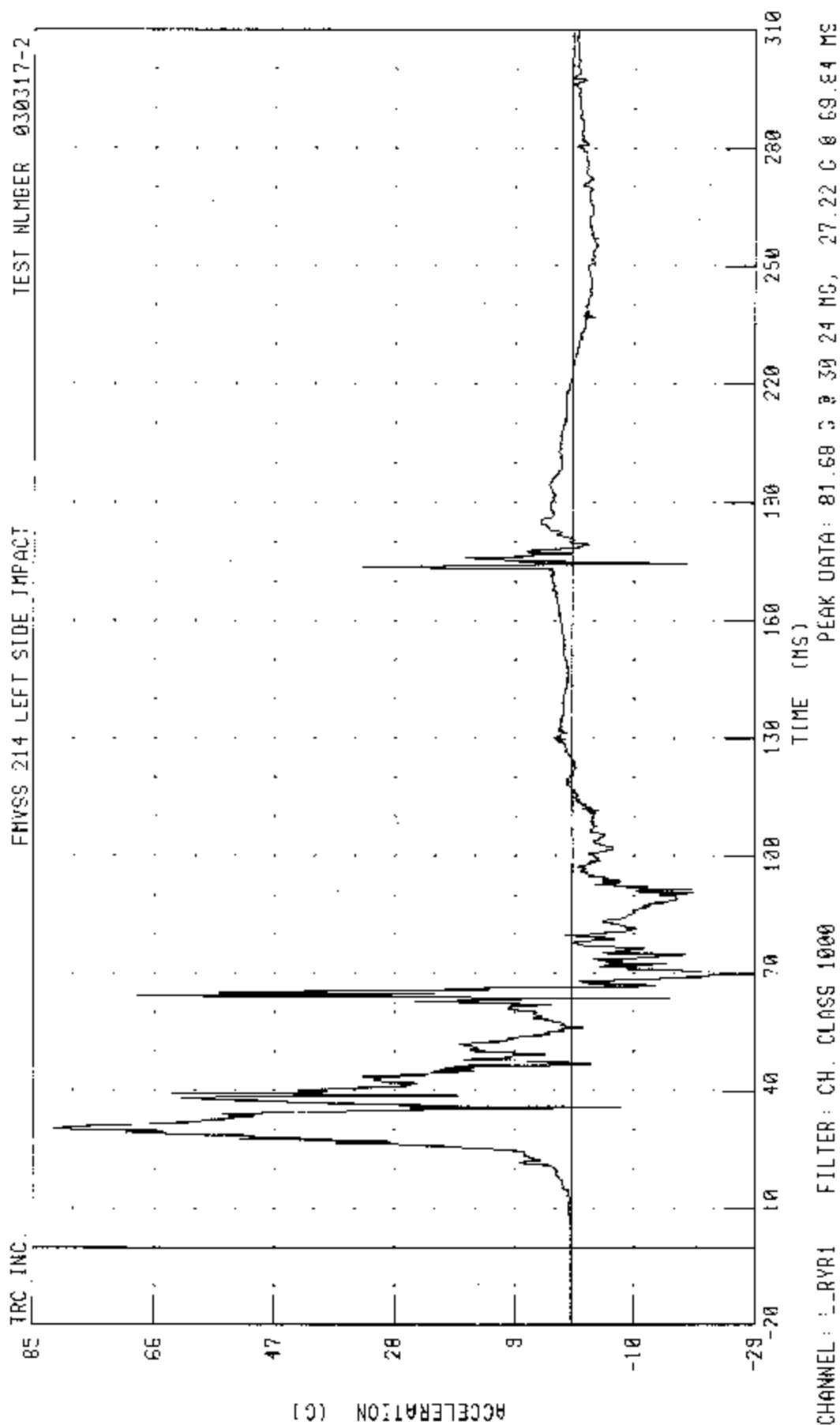


CHANNEL: LURYVI FILTER: CH. CLASS 180

PEAK DATA: 40.67 KM/H @ 66.72 MS, 0.00 KM/H @ 0.56 MS

55/28 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2005 HAZON 6

DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION



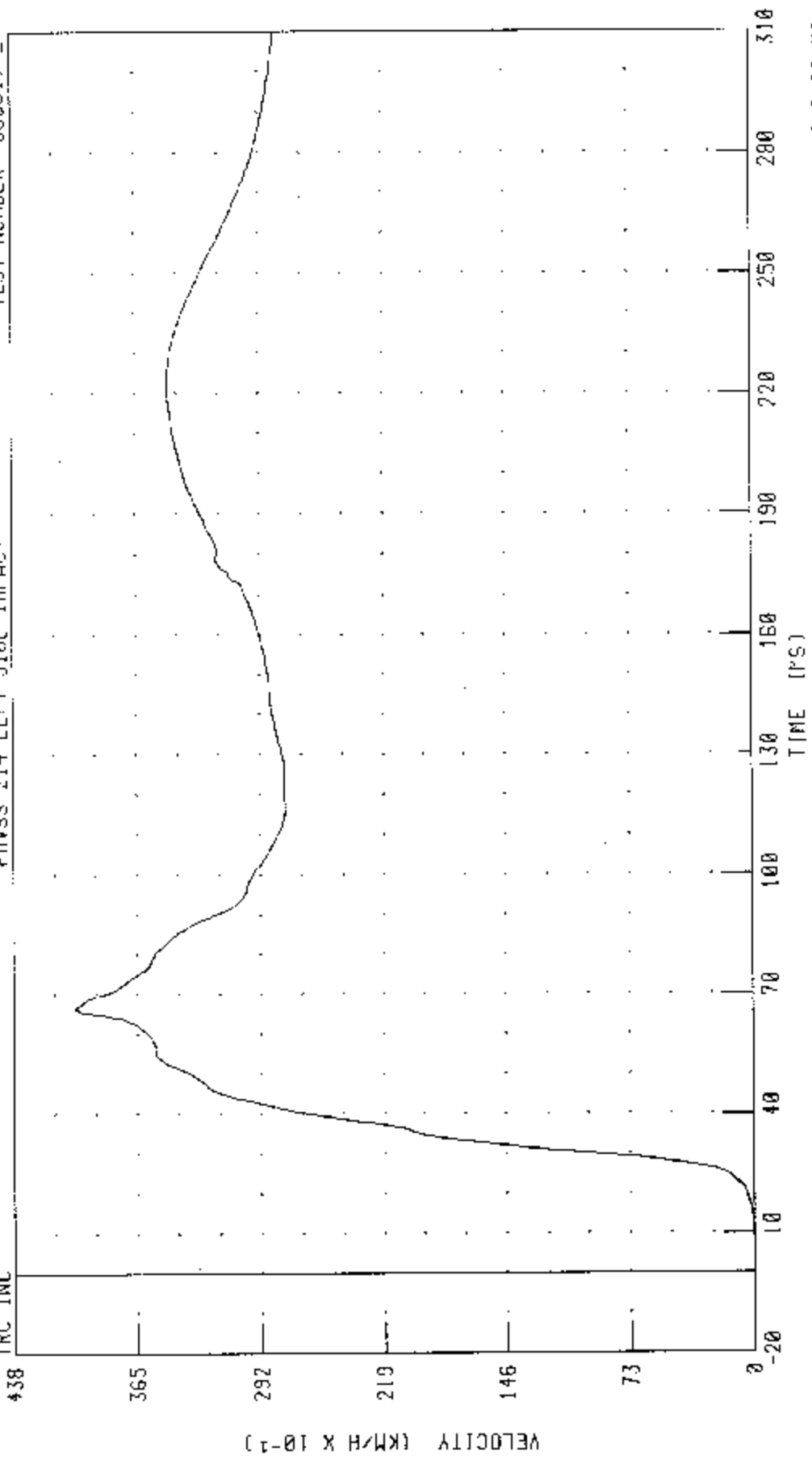
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER LOWER RIB Y-AXIS REDUNDANT VELOCITY

TEST NUMBER: 030317-2

FMVSS 214 LEFT SIDE IMPACT

TRC INC



CHANNEL: LLRYVE FILTER: CH CLASS 180

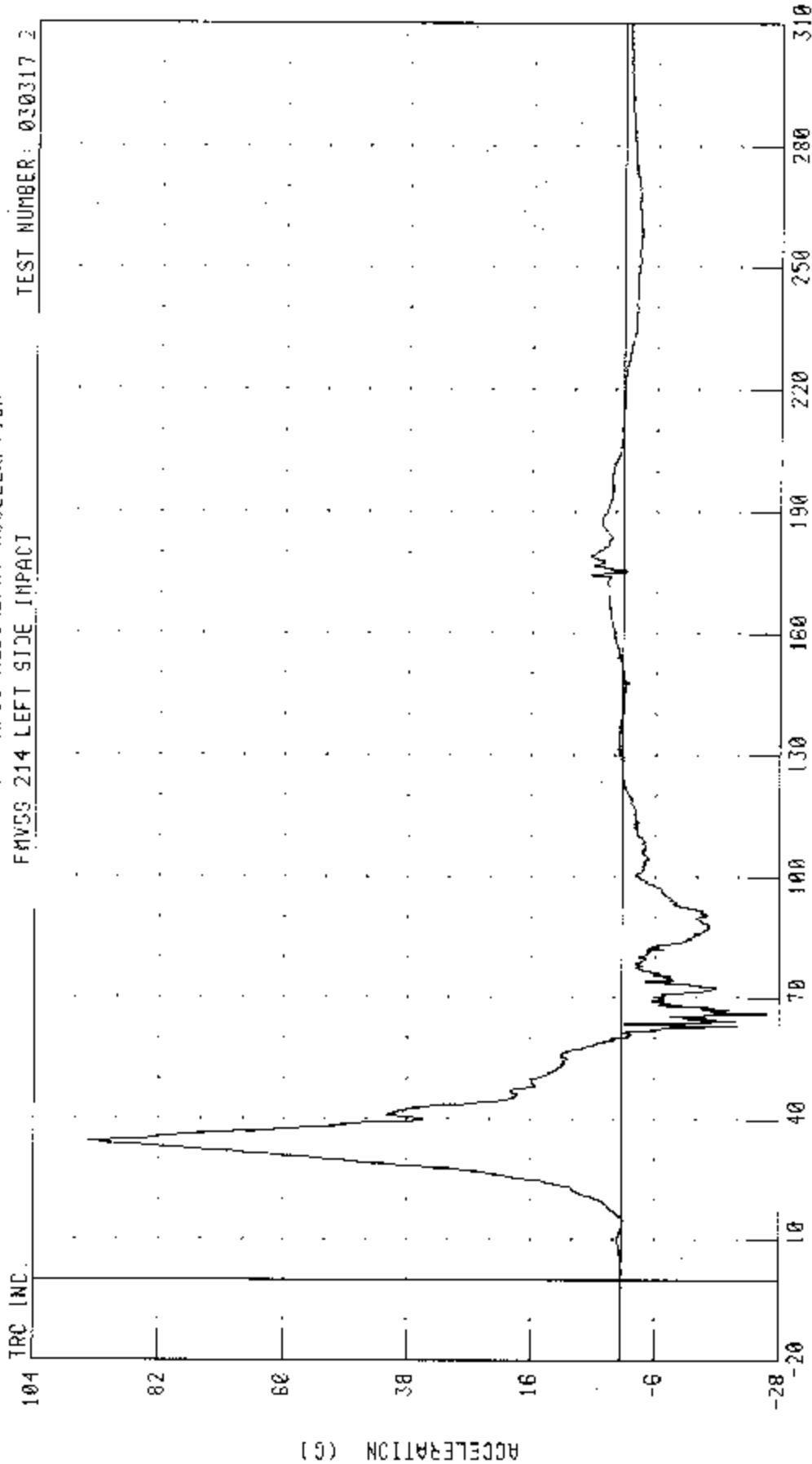
PEAK DATA: 10 13 KM/H 0 66 48 MS; 0 00 KM/H 0 0 0.00 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

TRC INC.

TEST NUMBER: 030317-2

FMVSS 214 LEFT SIDE IMPACT



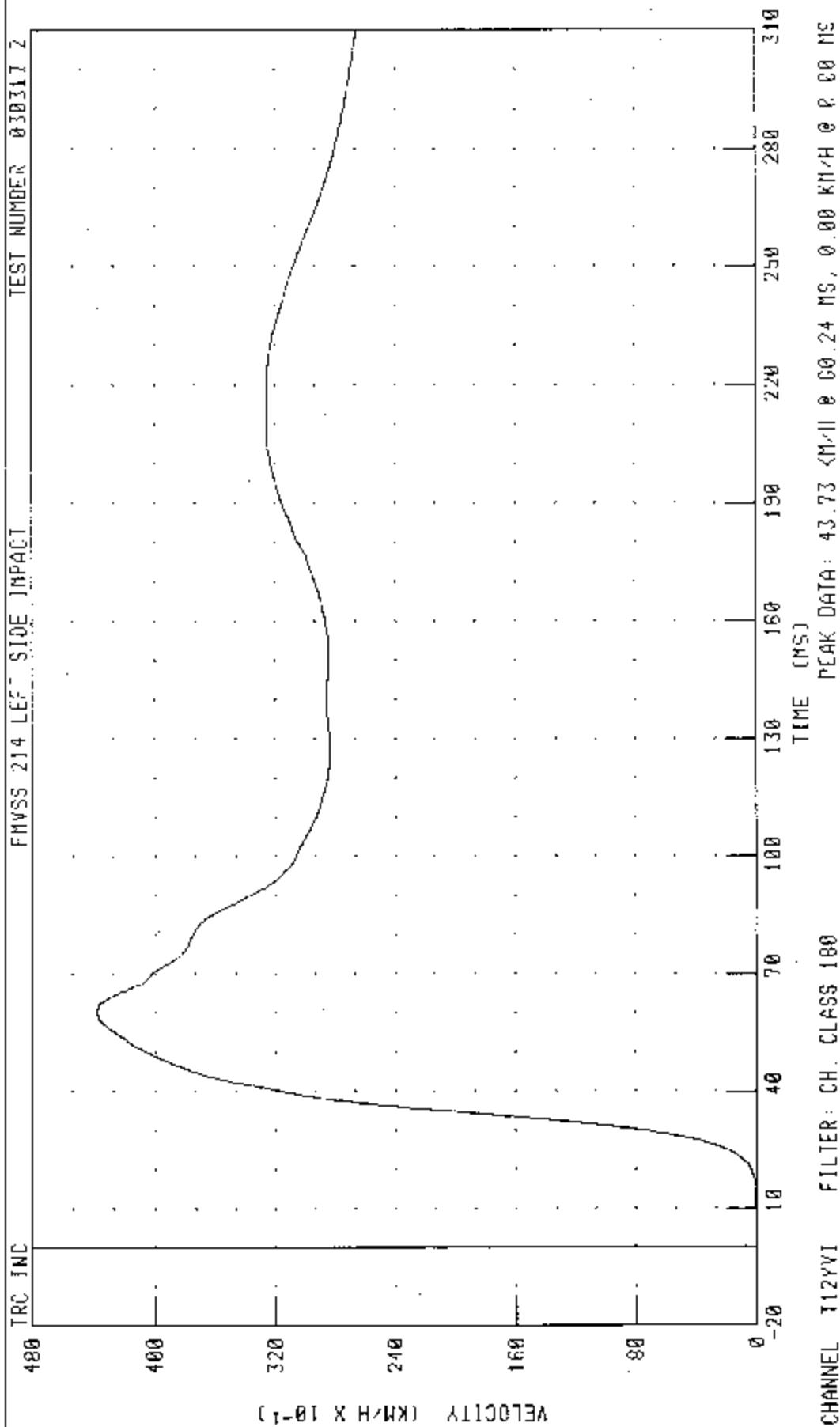
CHANNEL: T12YR1 FILTER: CH CLASS 1000

PEAK DATA: 94.36 G @ 34.64 MS; -25.70 G @ 66.00 MS



55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER LOWER SPINE Y AXIS RECDUANT VELOCITY



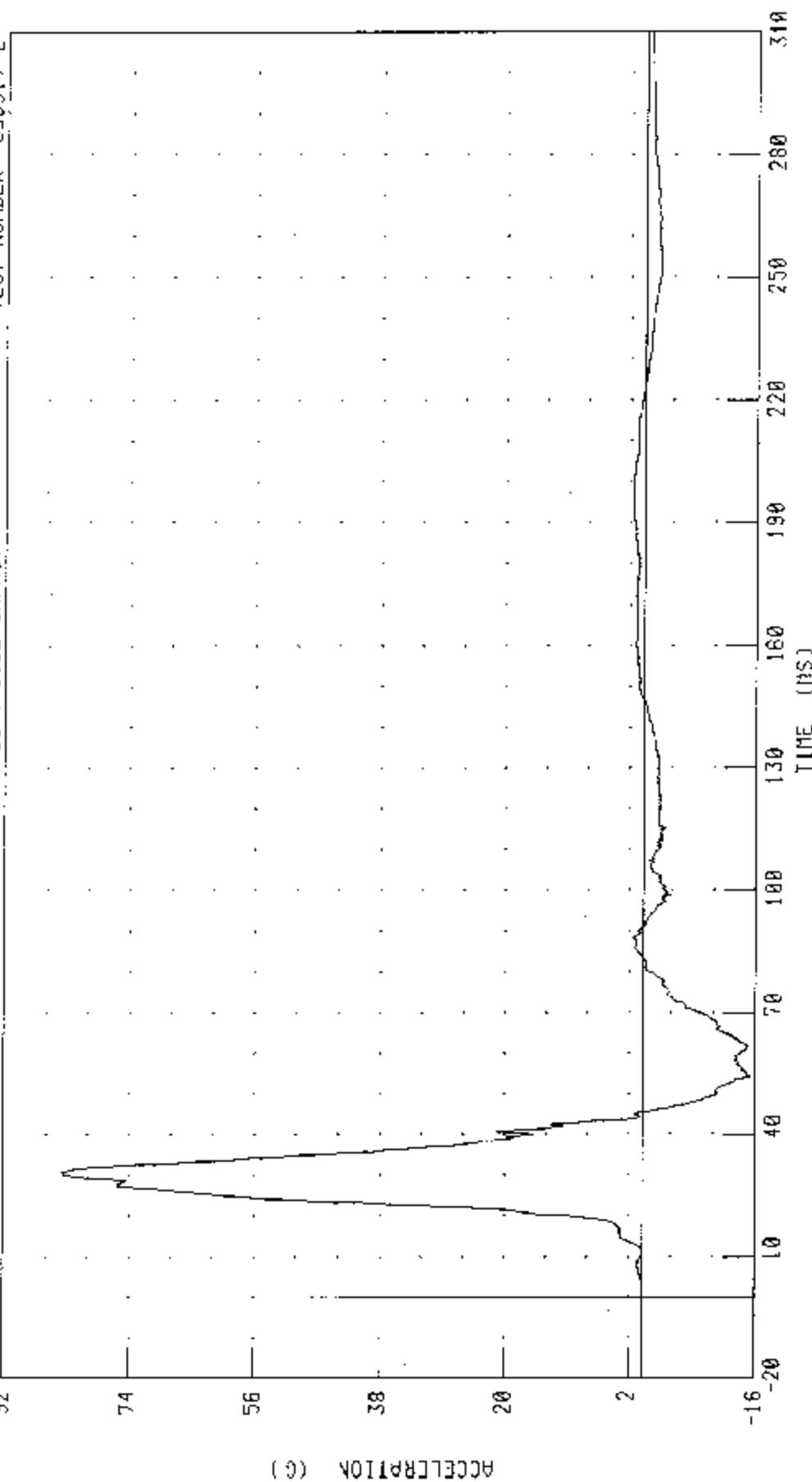
55/73 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER PELVIS Y-AXIS REDUNDANT ACCELERATION

TRC INC

FMVSS 214 LEFT SIDE IMPACT

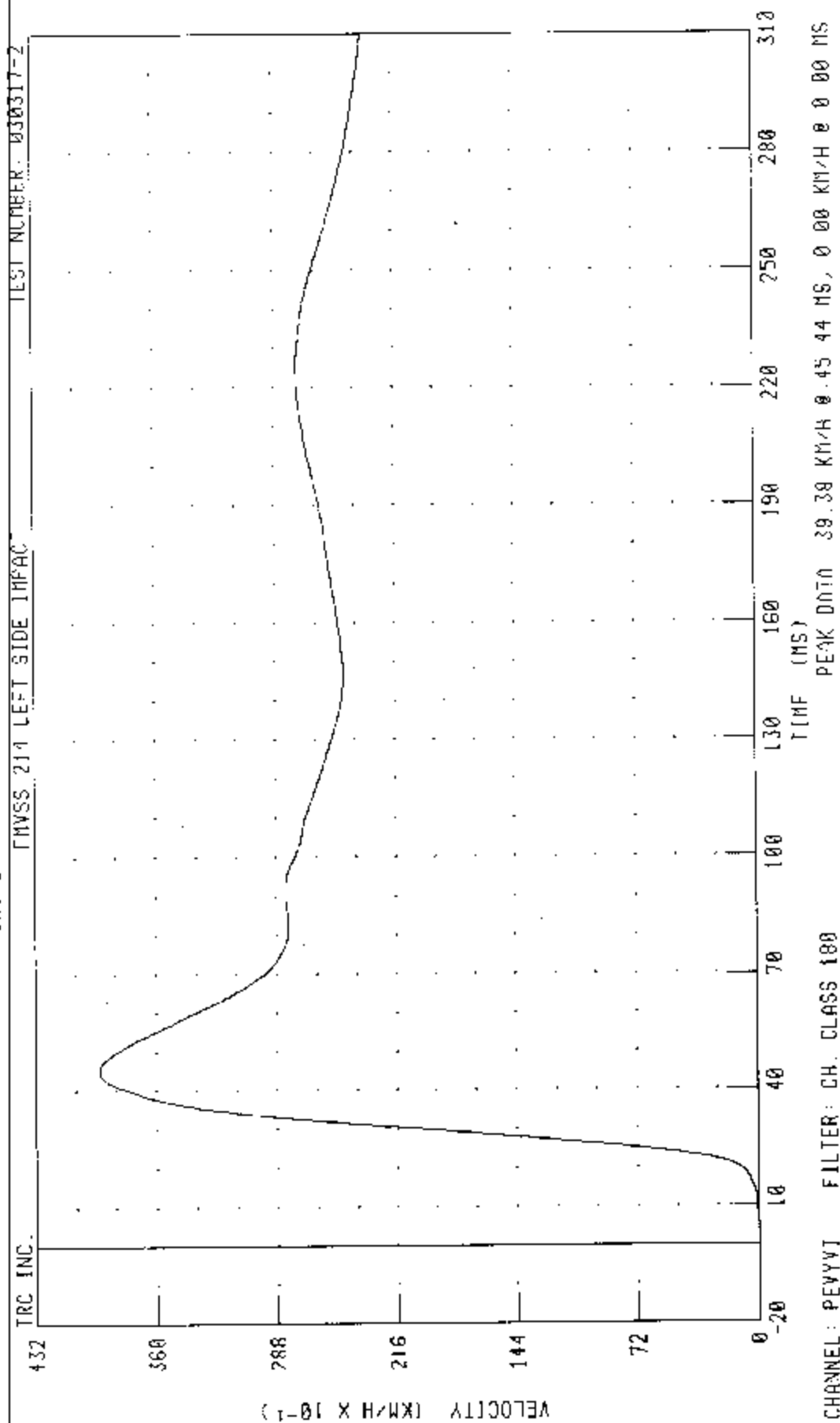
TEST NUMBER 030317-2



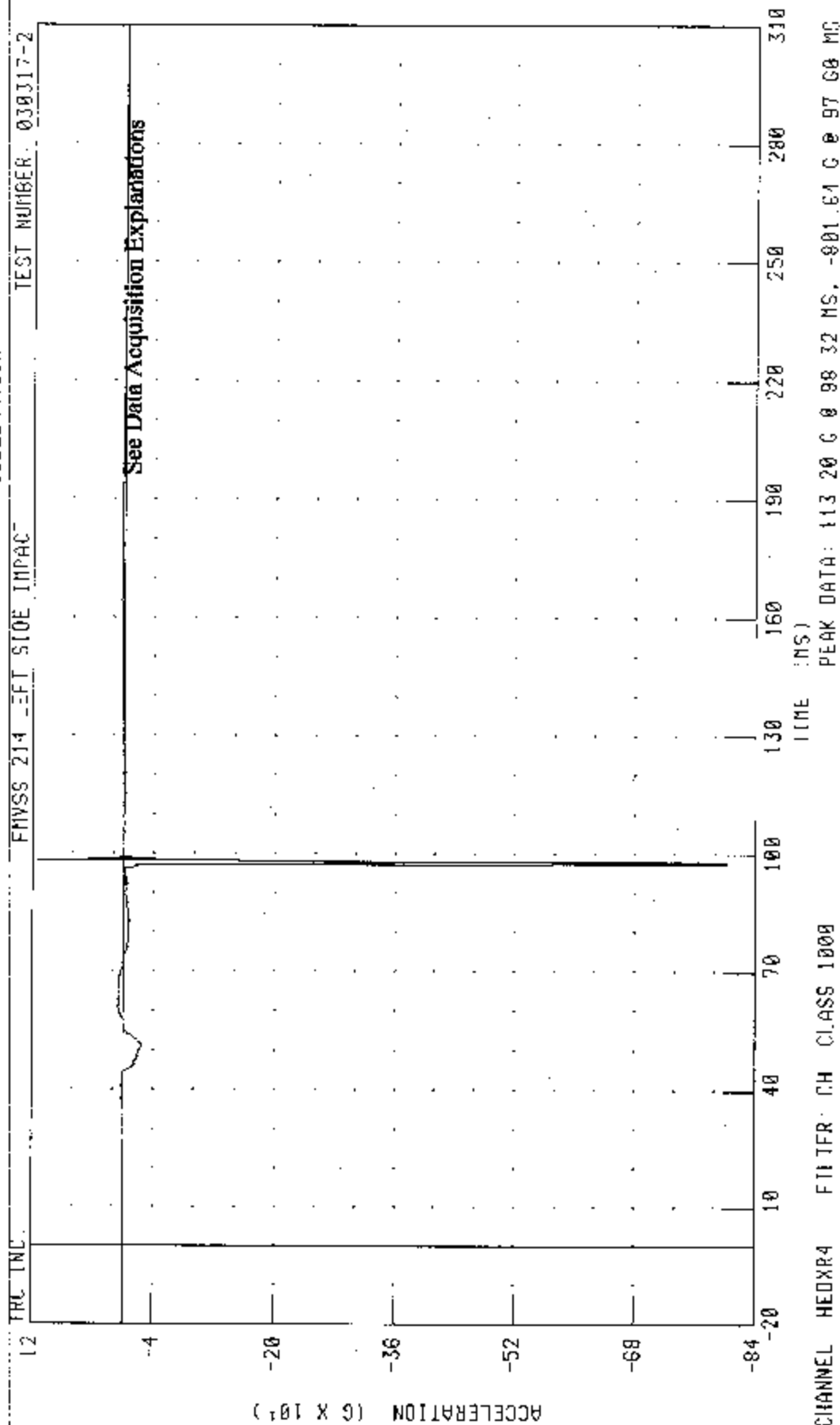
CHANNEL: PEVYR1 FILTER: CH. CLASS 1000

PEAK DATA: 83.70 G @ 30.88 MS, -15.36 G @ 54.16 MS

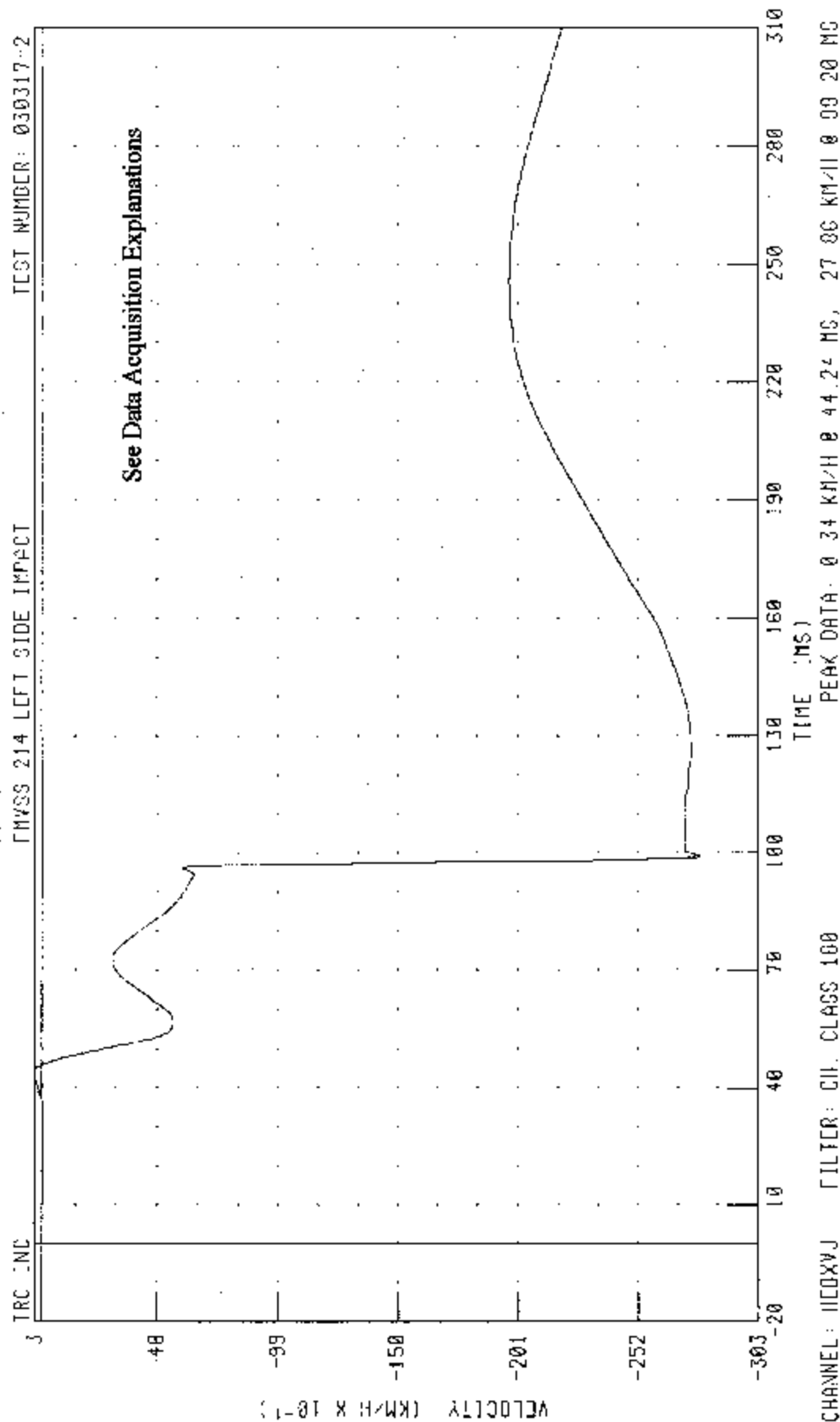
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 DRIVER PELVIS Y AXIS REDUNDANT VELOCITY



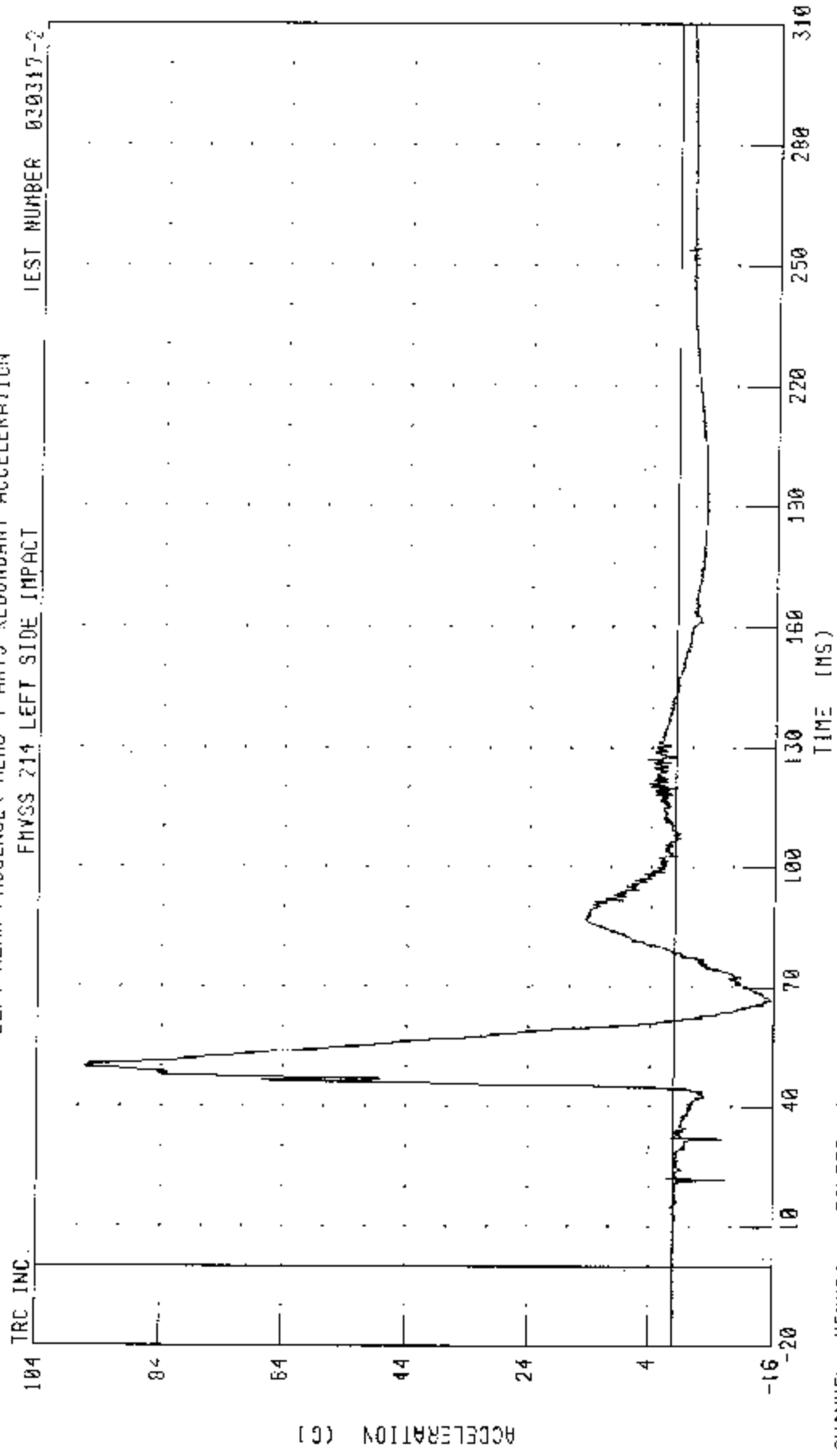
55/28 KPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 NARDA G  
LEFT REAR PASSENGER HEAD X AXIS REDUNDANT ACCELERATION



55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
LEFT REAR FINGER FEARC X-AXIS REDUNDANT VELOCITY



55/28 KPII 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT ACCELERATION



TEST NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT

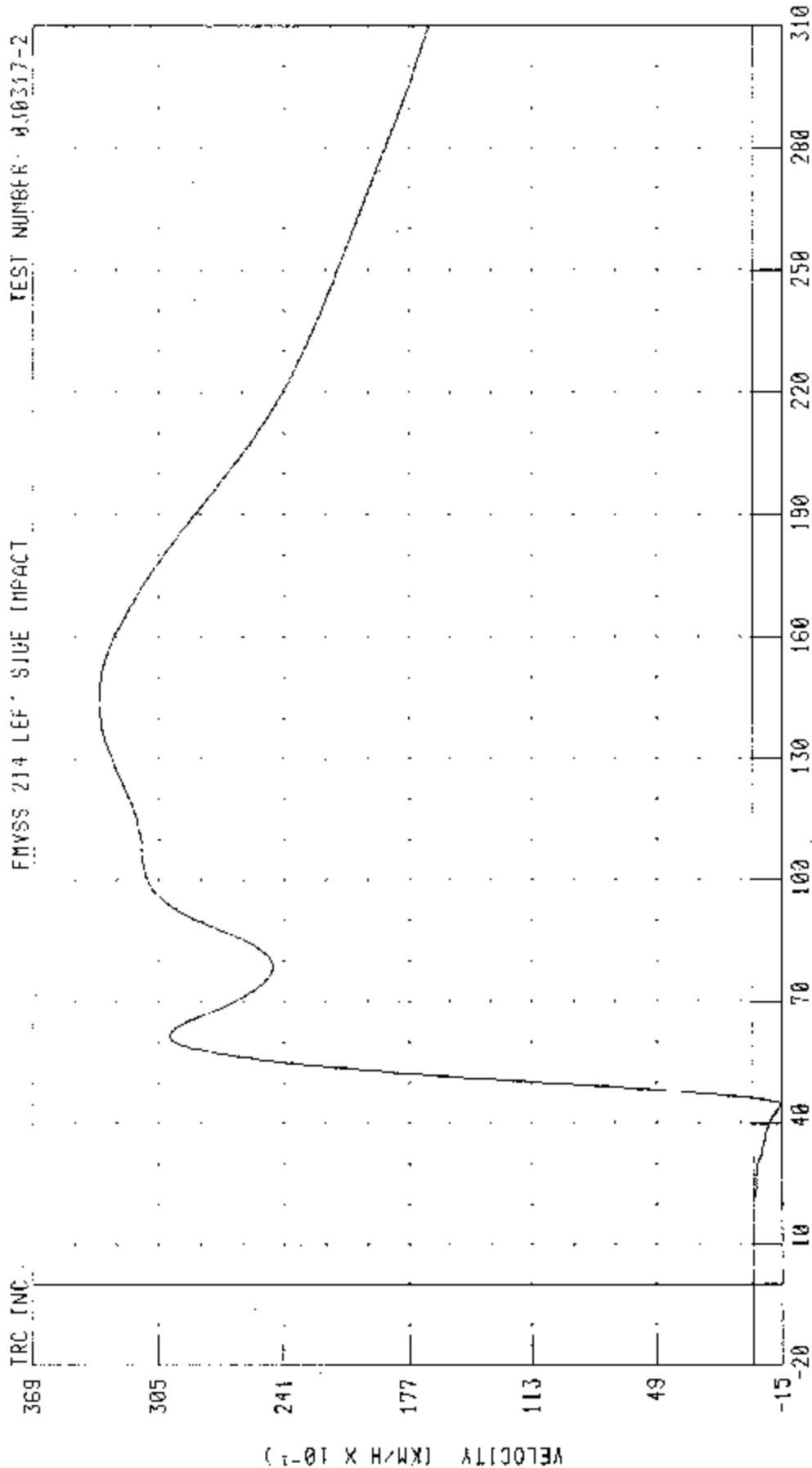
CHANNEL: HEADYR4 FILTER: CH. CLASS 1000 PEAK DATA: 96 35 0 0 50.24 MS; -15 38 0 0 66.64 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA E

LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

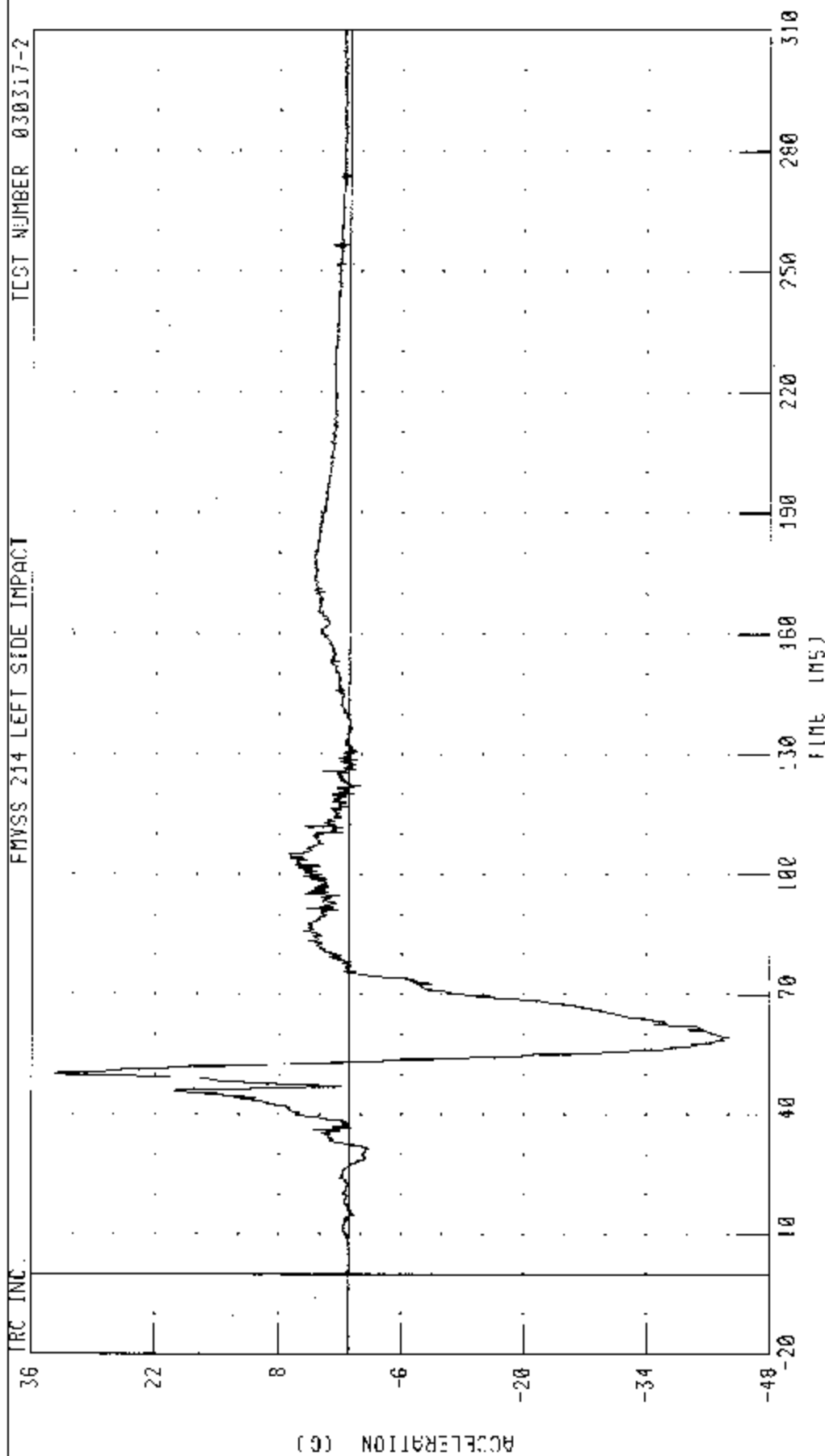
TEST NUMBER: 030317-2



PEAK DATA: 33.53 KM/H @ 143.68 MS, -1.39 KM/H @ 14.56 MS

CHANNEL: HEDYVJ FILTER: CH CLASS 180

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2005 MAZDA 6  
 LEFT REAR PASSENGER HEAD Z-AXIS REDUNDANT ACCELERATION



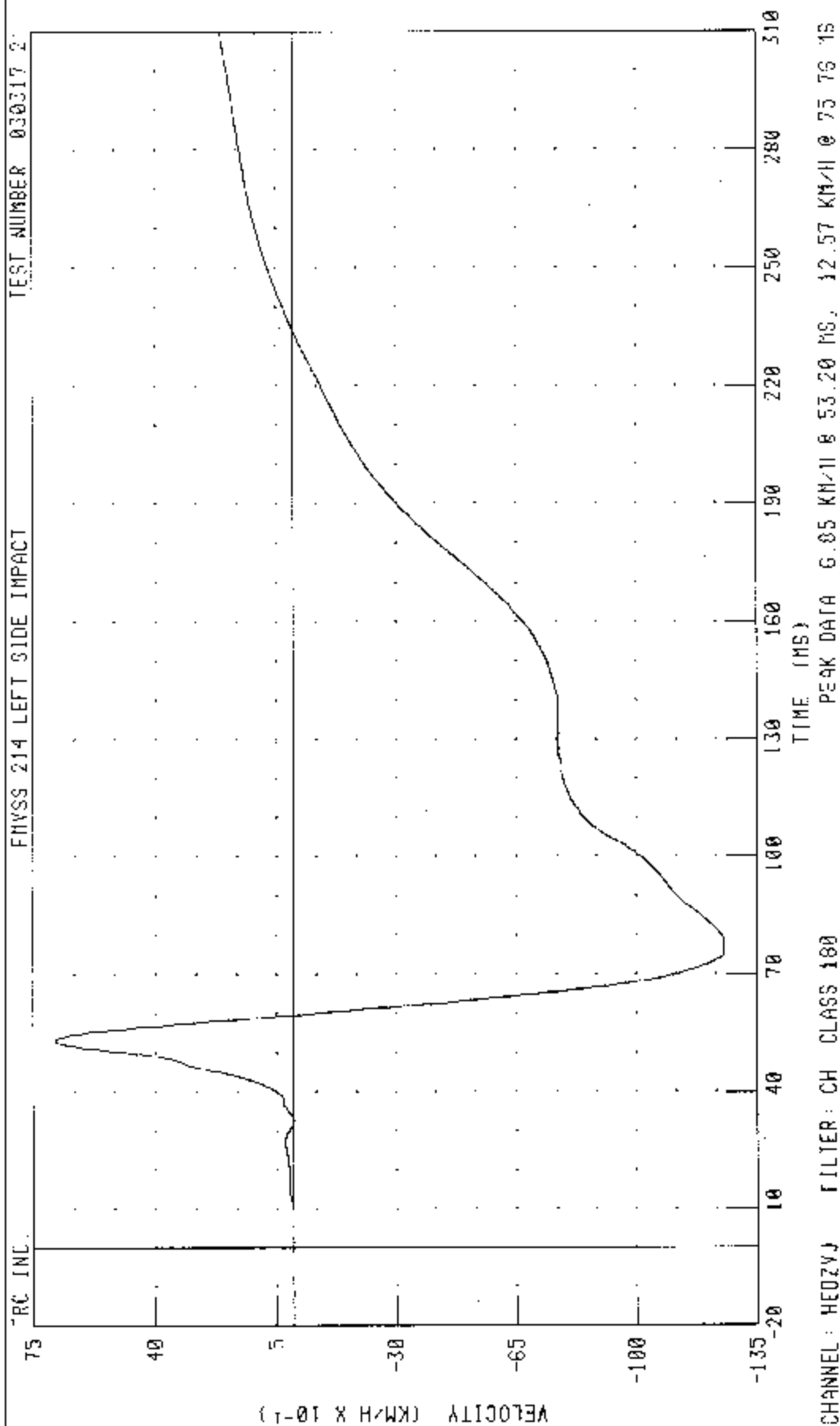
CHANNEL: HEDZR4 FILTER: CH. CLASS 1000

PEAK DATA: 33 25 C @ 50.40 MS, -43.54 C @ 59.36 MS



55/28 KPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER HEAD /-AXIS REDUNDANT VELOCITY

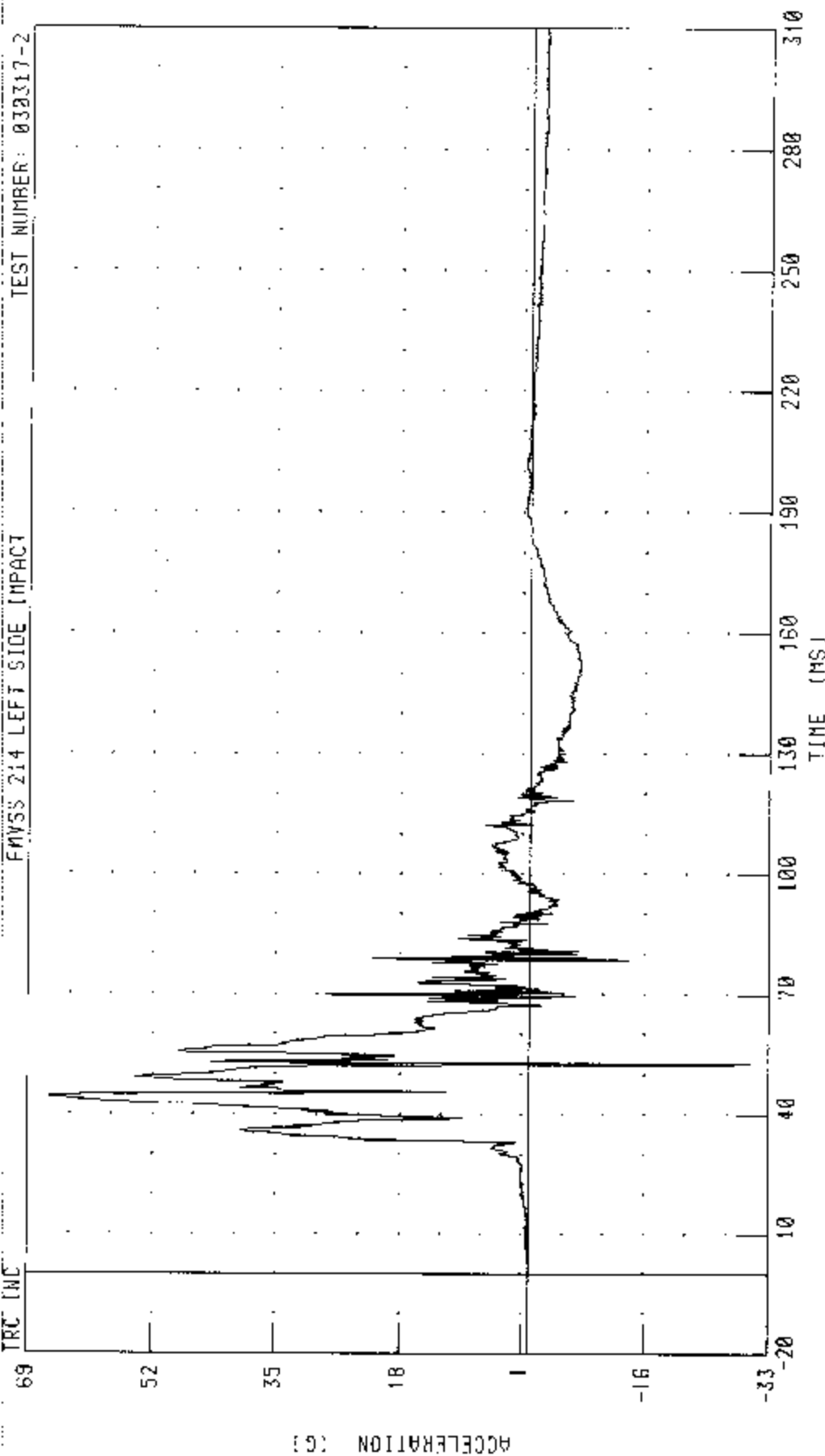


55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

TRC INC

FVSS 214 LEFT SIDE IMPACT

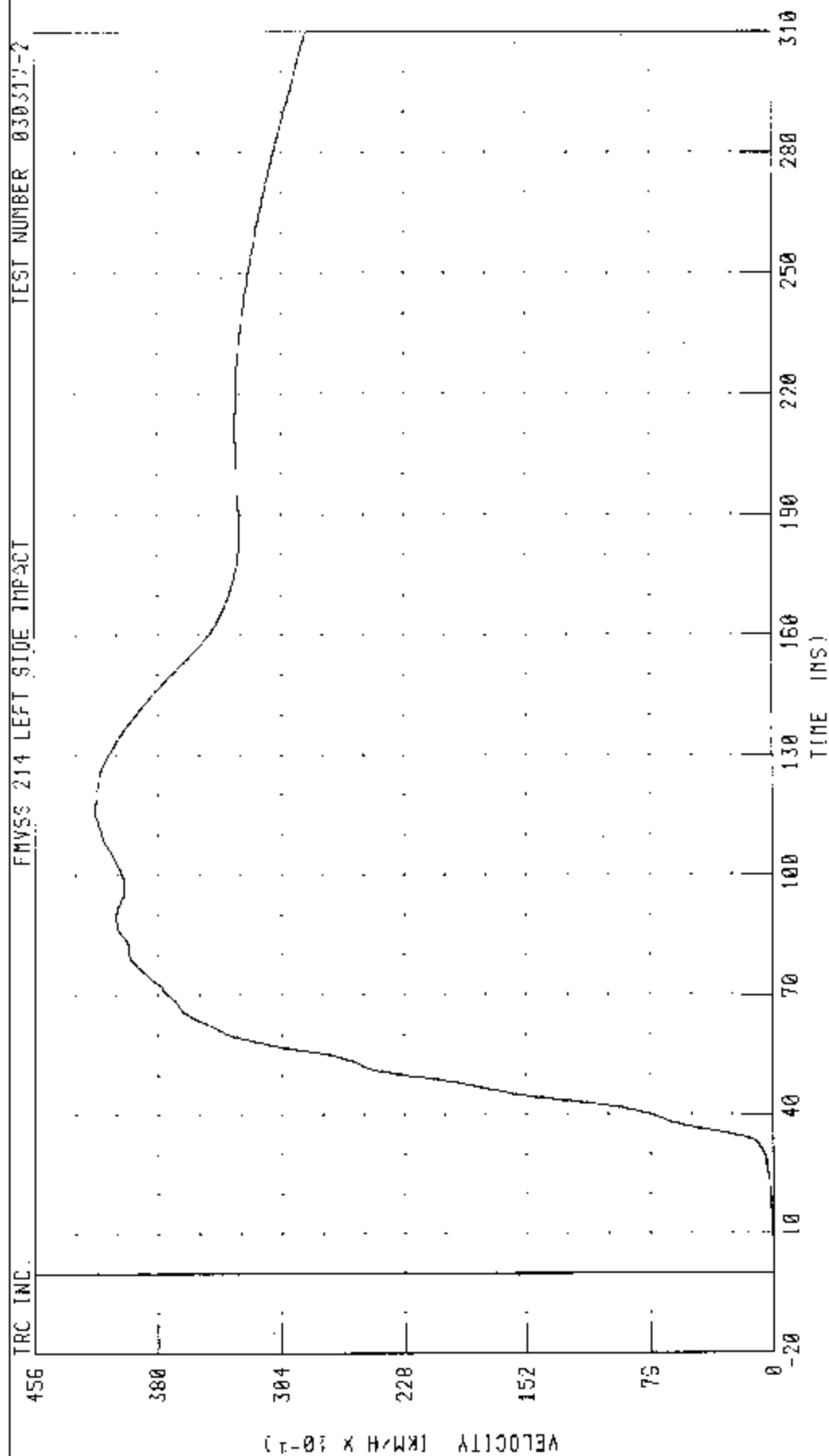
TEST NUMBER: 030317-2



CHANNEL LURYR4 FILTER CH. CLASS 1000

PEAK DATA 66.20 G @ 44.40 MS; 30.42 G @ 52.56 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INIU LEFT SIDE OF 2003 HAZDA 6  
 LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT VELOCITY



PEAK DATA: 41.89 KM/H @ 116.48 MS, 0.00 KM/H @ 216 MS

CHANNEL: LURVVJ FILTER: CH. CLASS 180

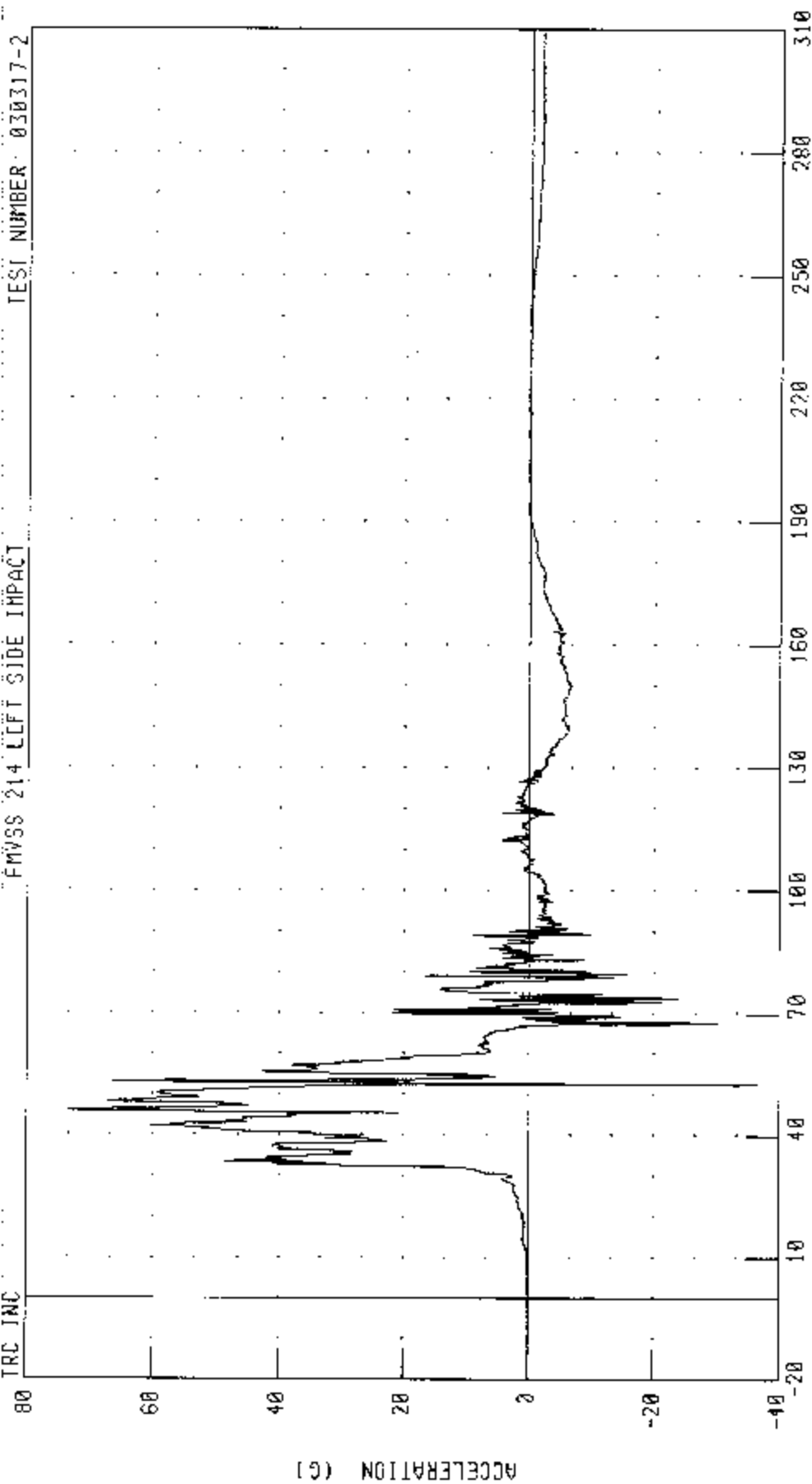
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

TRC INC

TEST NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT

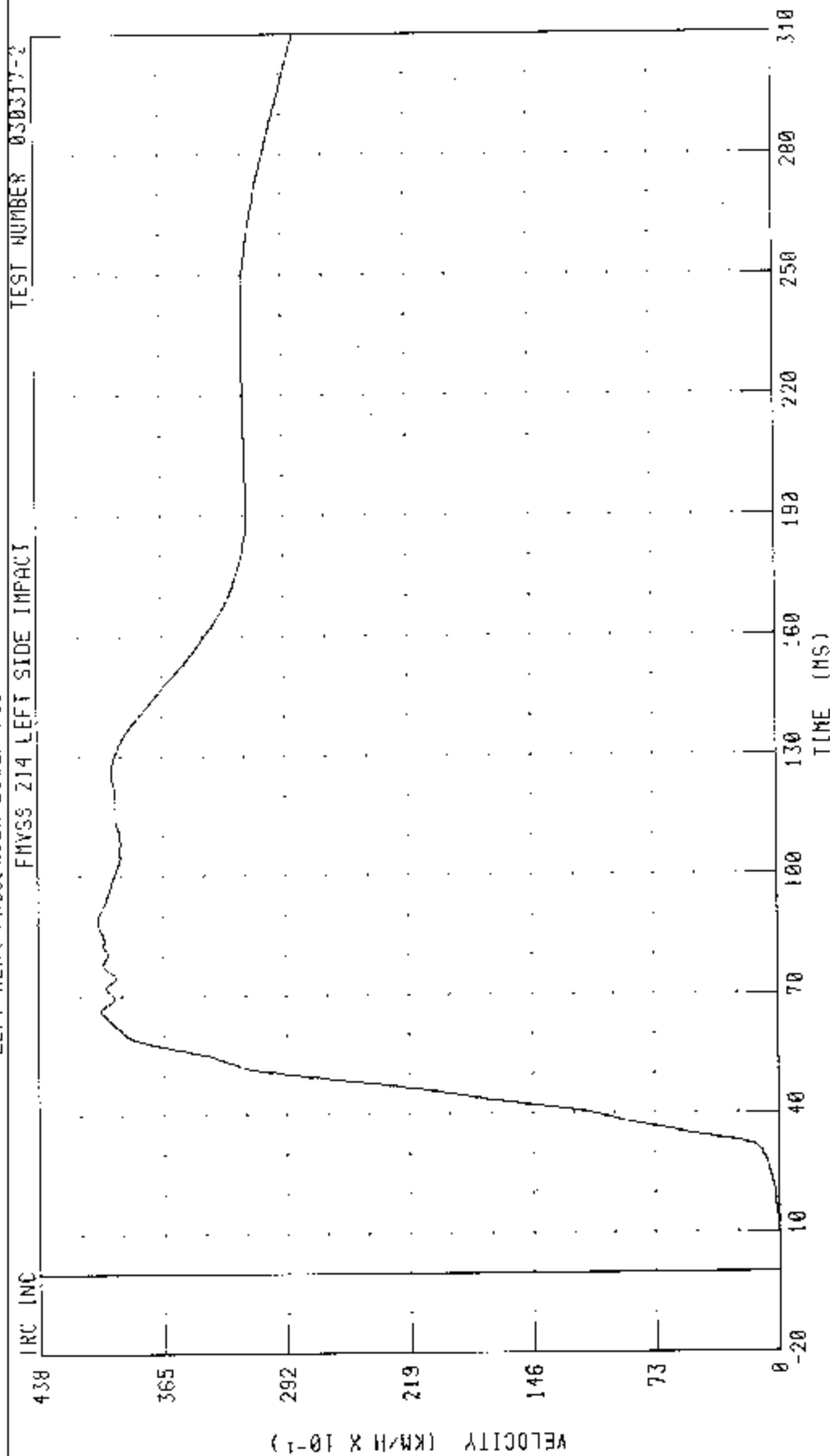


CHANNEL: LLRYR4 FILTER: CH CLASS 1000

PEAK DATA

73.51 G @ 46.16 MS, -30 G @ 52.56 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING OFFFORMABLE BARRI(FR) INTO LEFT SIDE OF 2003 MAZDA 6  
 LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT VELOCITY



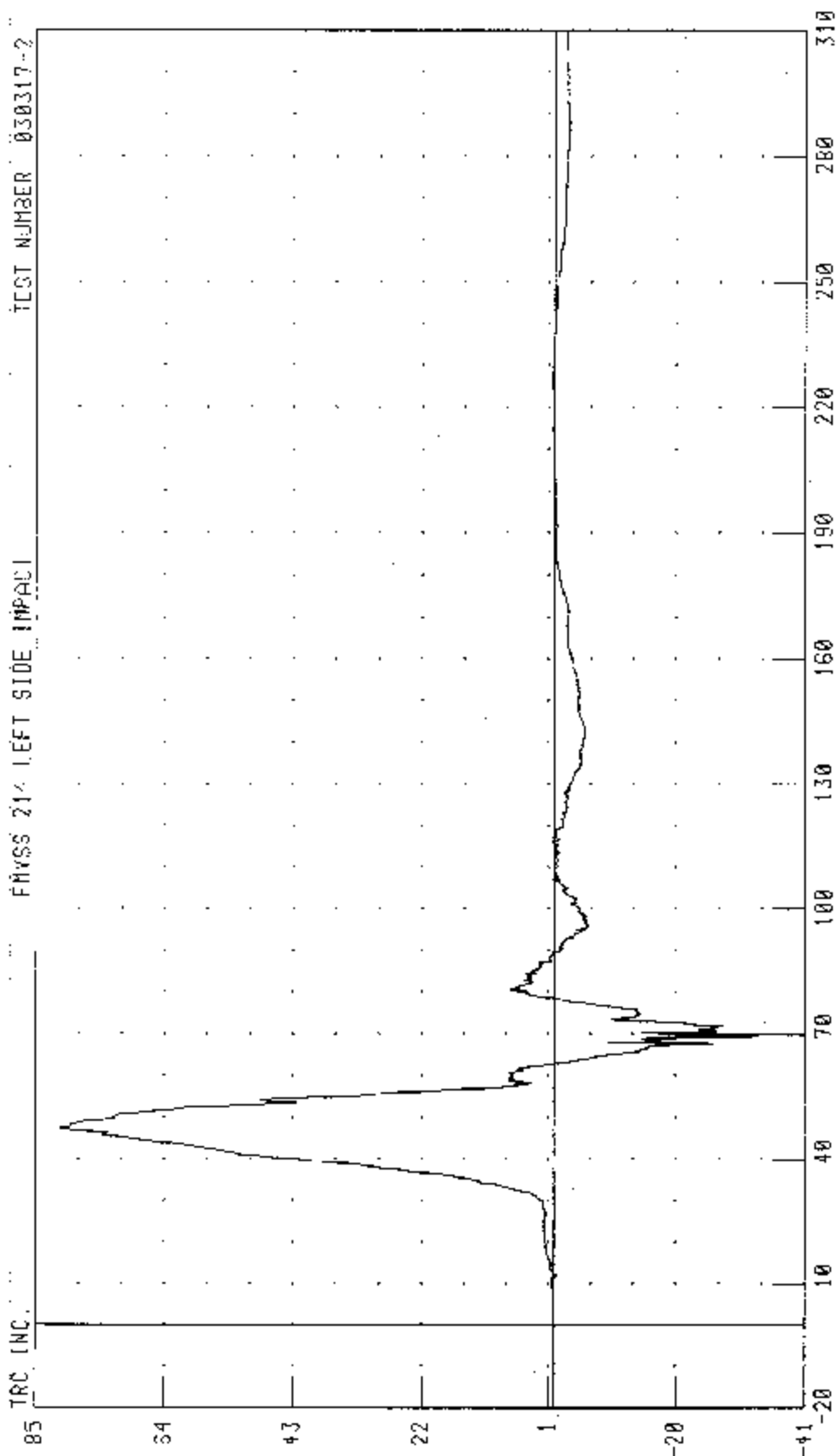
CHANNEL: LLRYVJ FILTER: CH. CLASS 180 PEAK DATA 40.29 KM/H 3.89 12 MS, 0.00 KM/H 0 1.12 MS

55/28 KPH 90 DEGREE SIDE IMPACT INVOLVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 5

LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

PHYSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2



(C) NOIL09313000

CHANNEL: T12YR4 FILTER: CH CLASS 1000

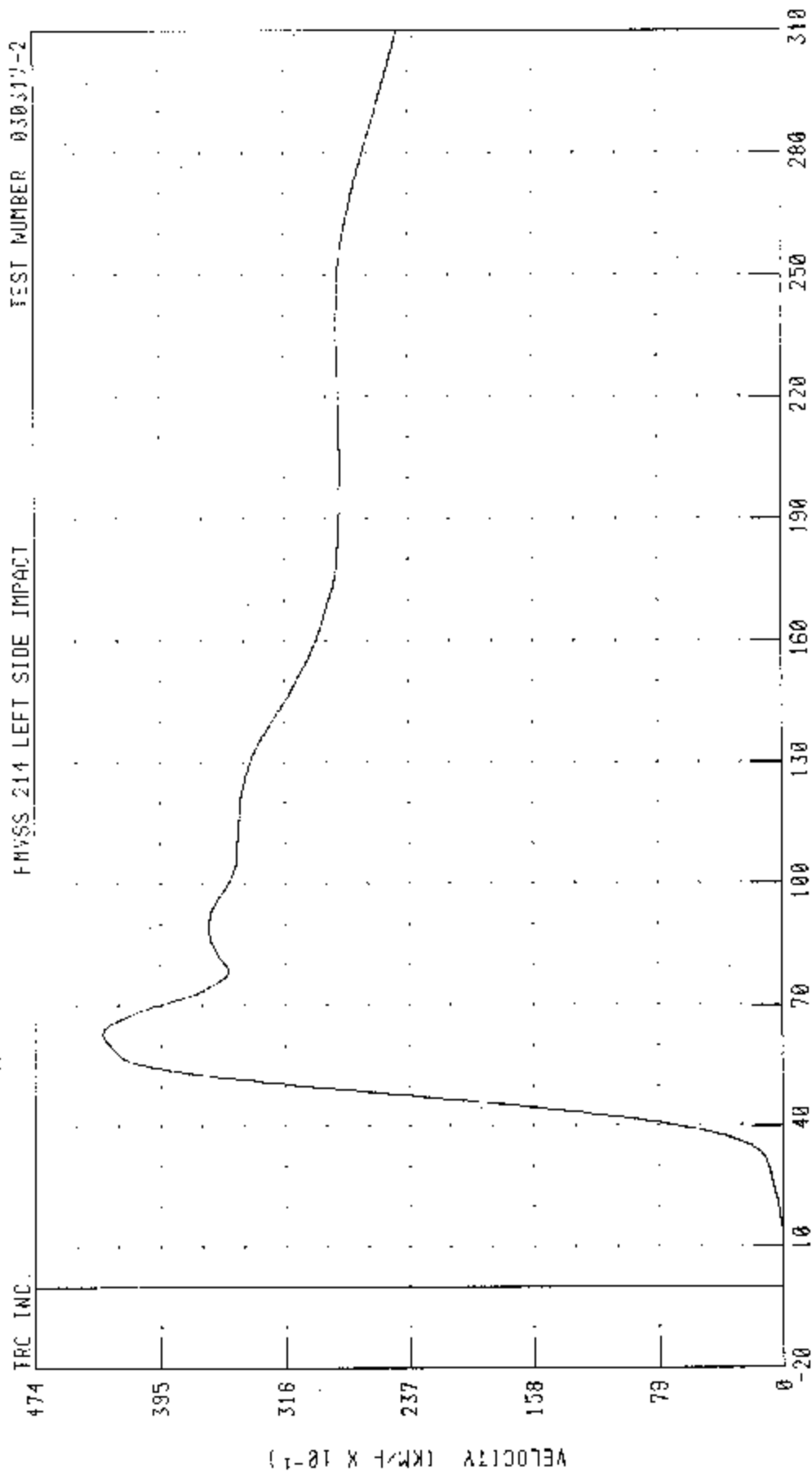
PEAK DATA 81 01 G @ 47 52 MS, 37.74 G @ 70.30 MS

55/28 KPH 50 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2



TIME (MS)

PEAK DATA: 43.11 KM/H @ 62.96 MS; 0.00 KM/H @ 0.72 MS

CHANNEL: T12YVJ FILTER: CH. CLASS 180

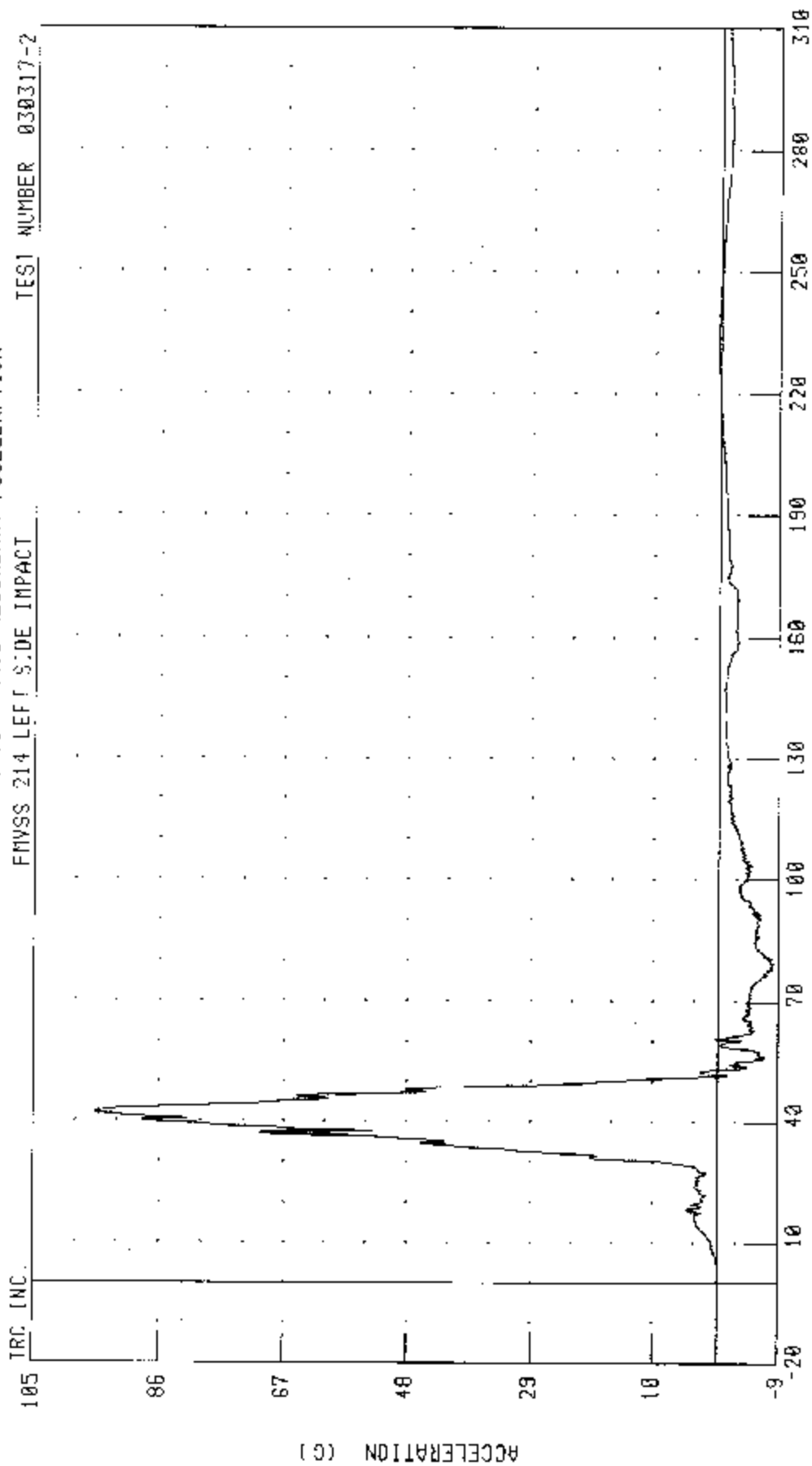
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA E

LEFT REAR PASSENGER PILL'S Y-AXIS REDUNDANT ACCELERATION

TES1 NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT

TRC INC.



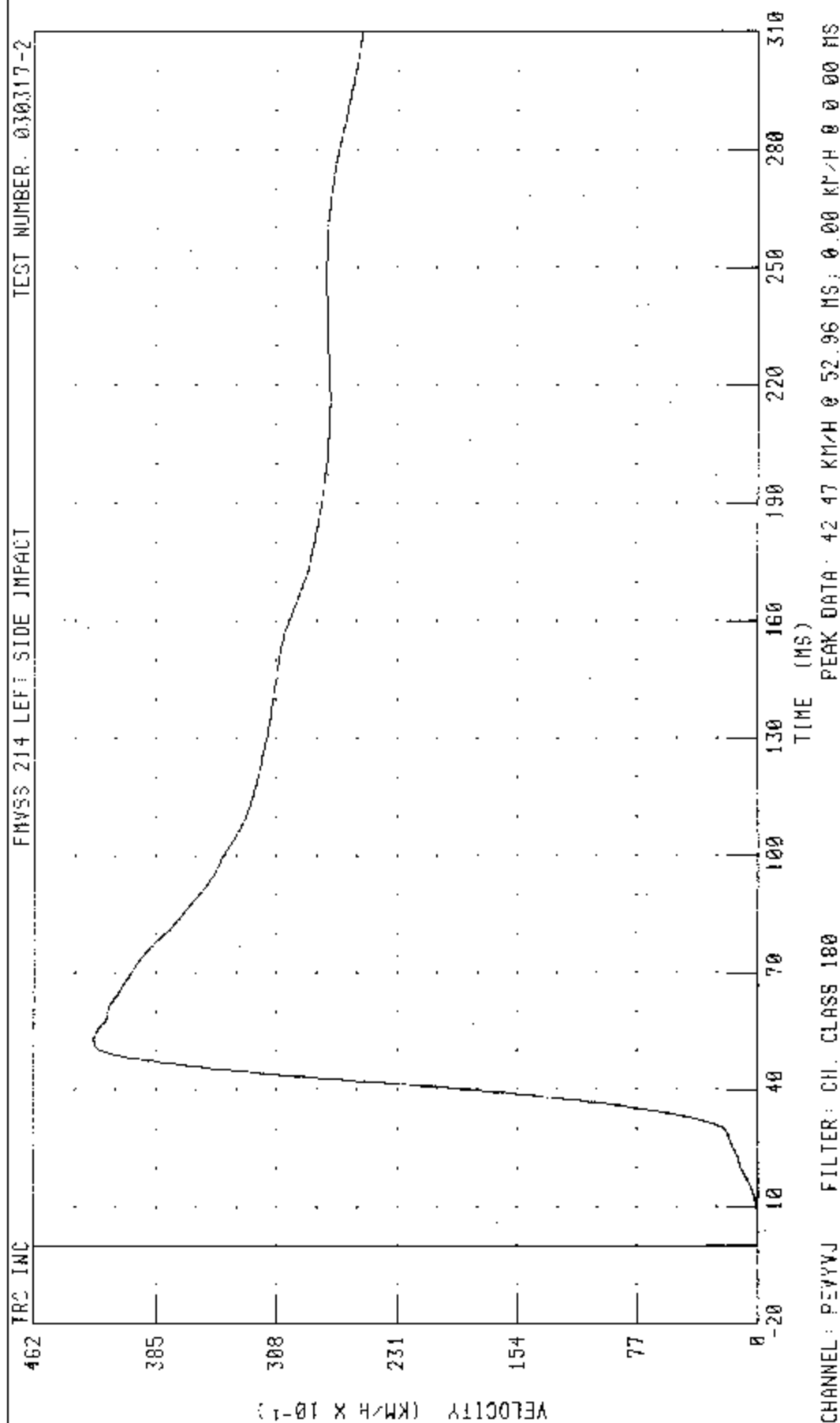
TIME (MS)

CHANNEL PEVYR4 FILTER: CH CLASS 1000

PEAK DATA: 95 70 0 0 42.00 MS, -8 21 G B 70.16 MS



55/28 KP4 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 LEFT REAR PASSENGER PELVIS Y-AXIS REOUNDANT VELOCITY

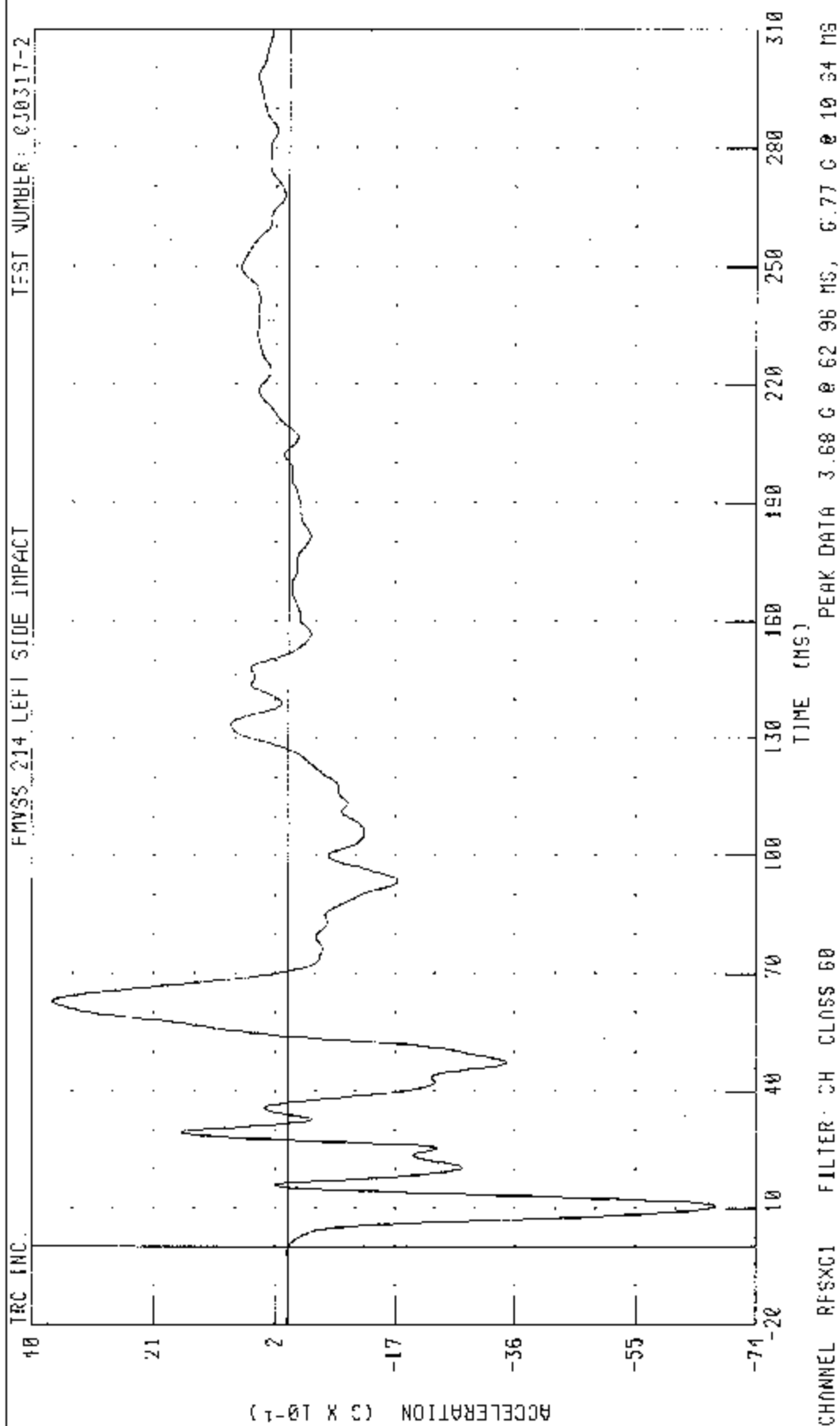


Test Vehicle Instrumentation Plots

Acceleration Data - Filter Class 60

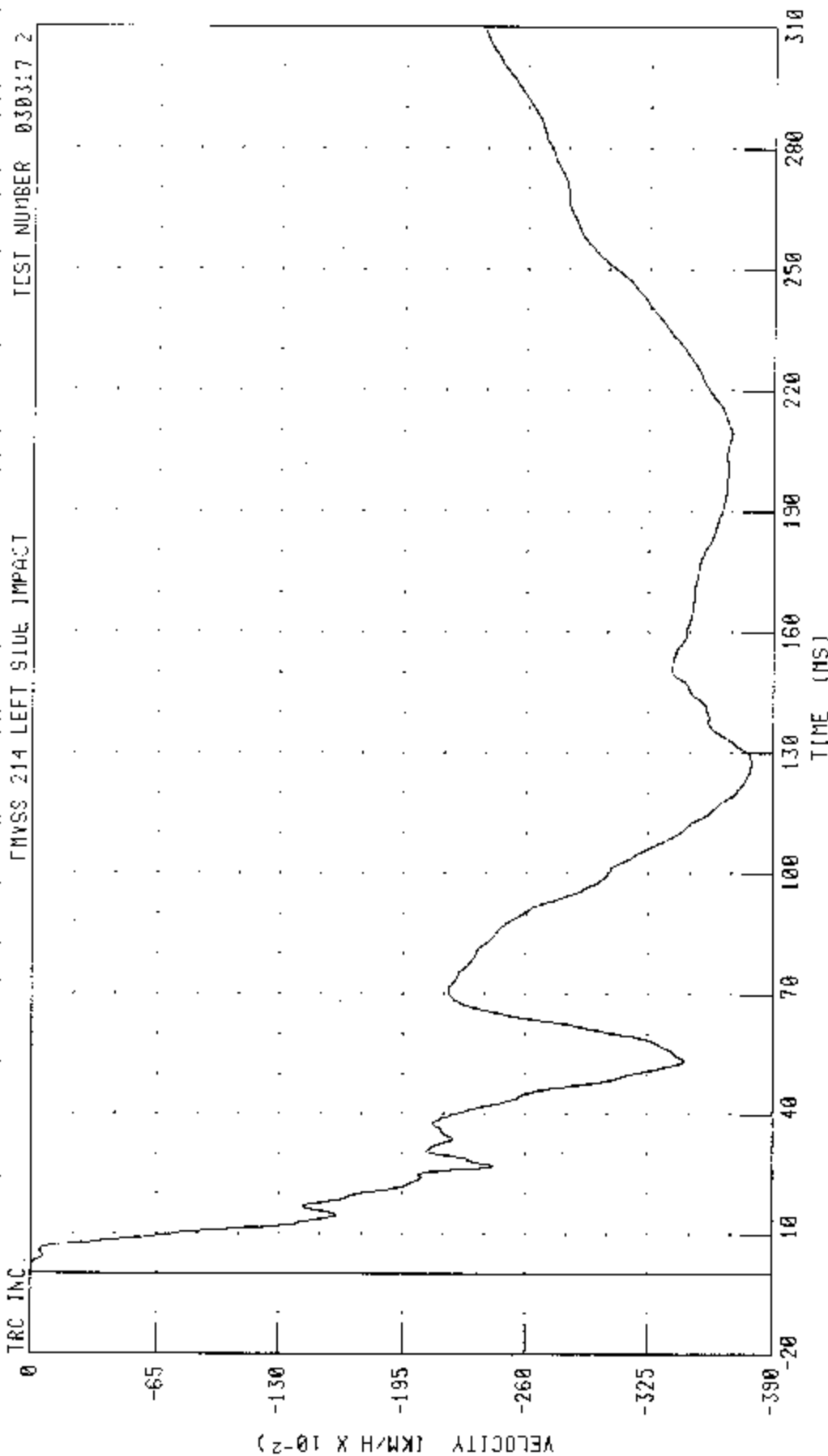
Integration Data - Filter Class 180

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 9  
RIGHT SIDE SILL AT FRONT SEAT X-AXIS ACCELERATION



55/28 KPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 MAZDA C

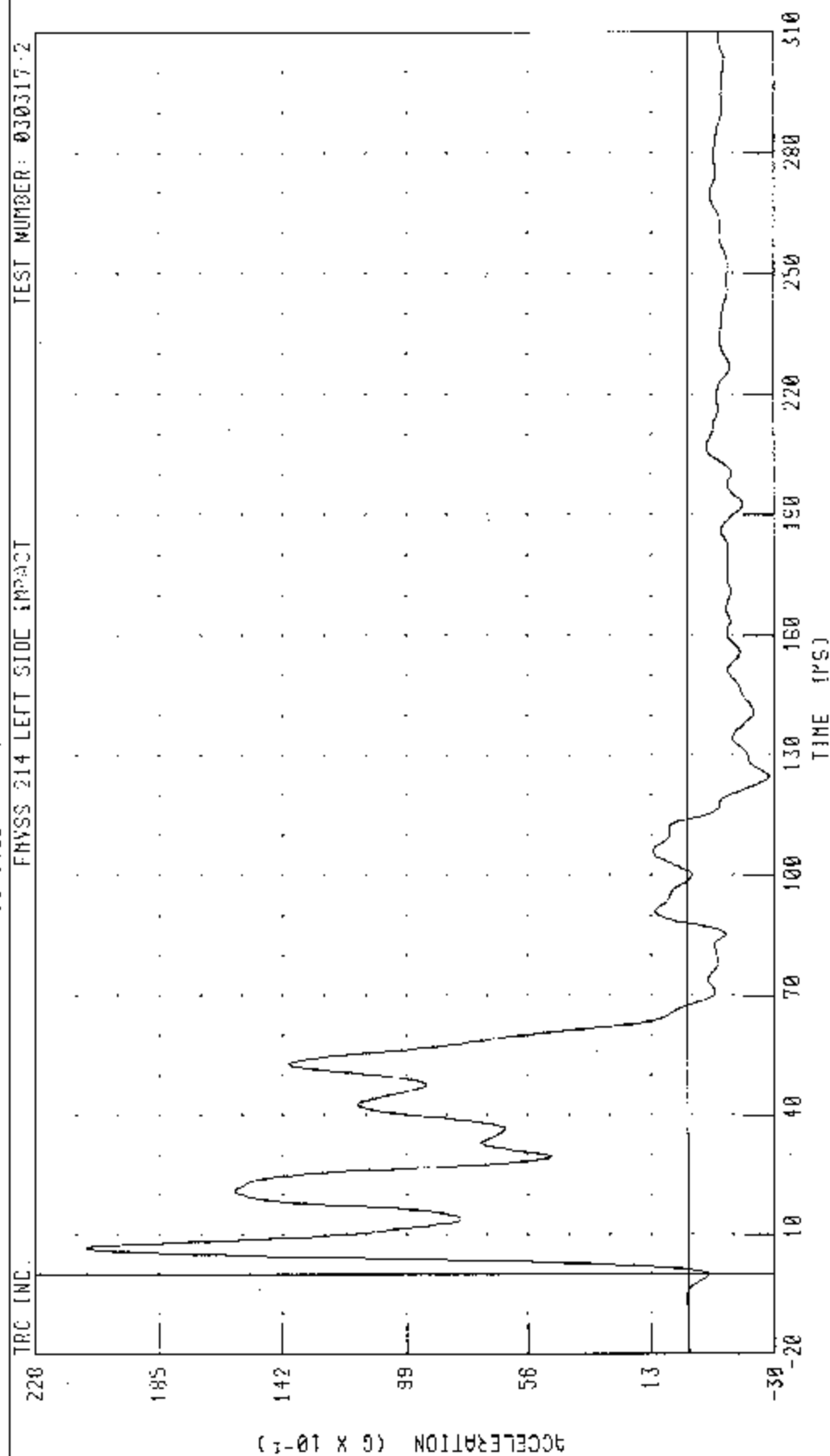
RIGHT SIDE SILL AT FRONT SEAT X AXIS VELOCITY



CHANNEL RFSXV1 FILTER CH CLASS 180

PEAK DATA 0.00 KM/H @ 1.92 MS; -3.79 KM/H @ 127.84 MS

55/28 MPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 HAZDA 6  
RIGHT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION



CHANNEL: RFSYG1 FILTER: CIL CLASS 00

PEAK DATA 21 06 G @ 6 64 MS, -2.81 G @ 124.72 MS

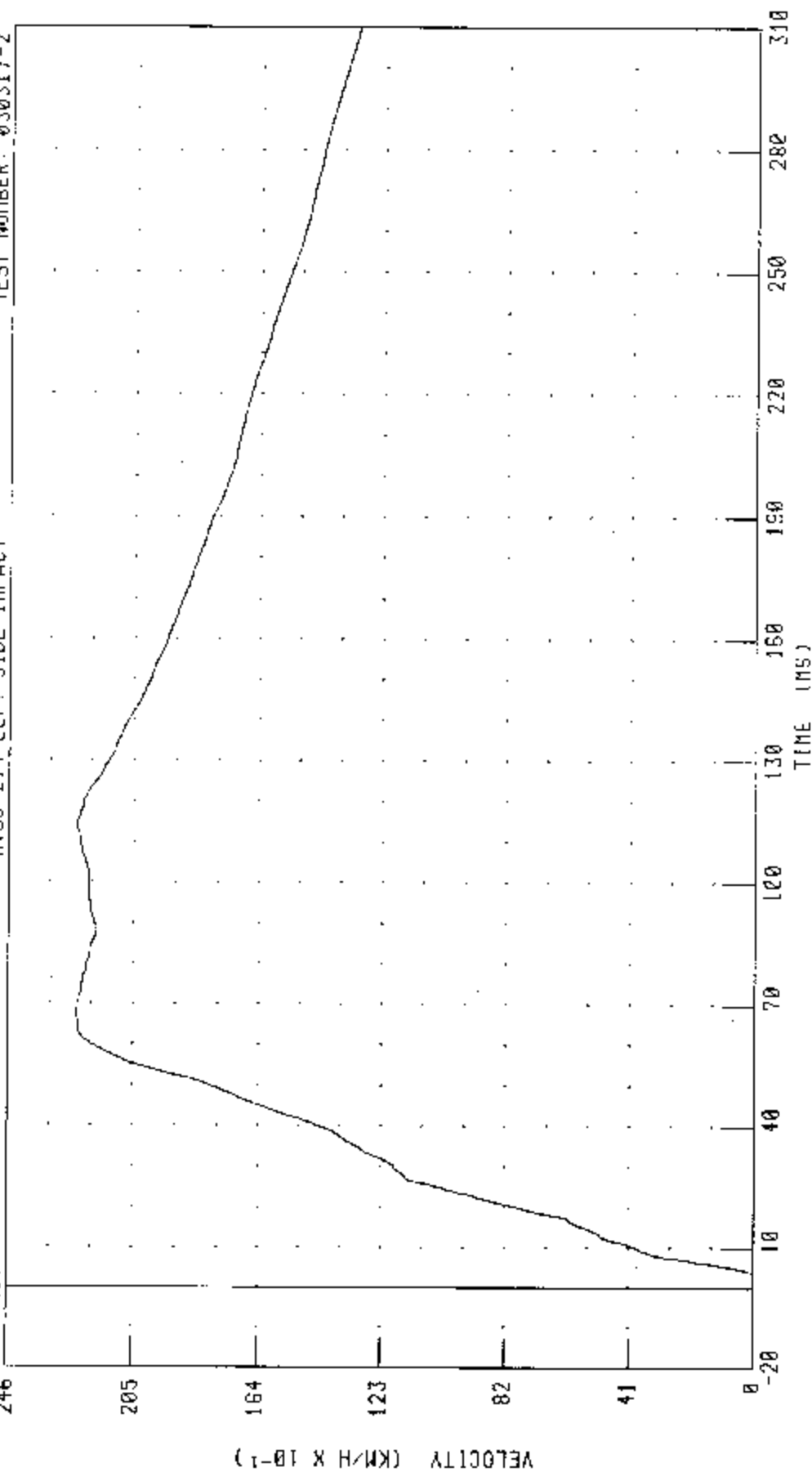
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 20P3 YAZDA 6

RIGHT SIDE SILL AT FRONT SEAT Y-AXIS VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2



CHANNEL: RFSYV1 FILTER: CH. CLASS: 180

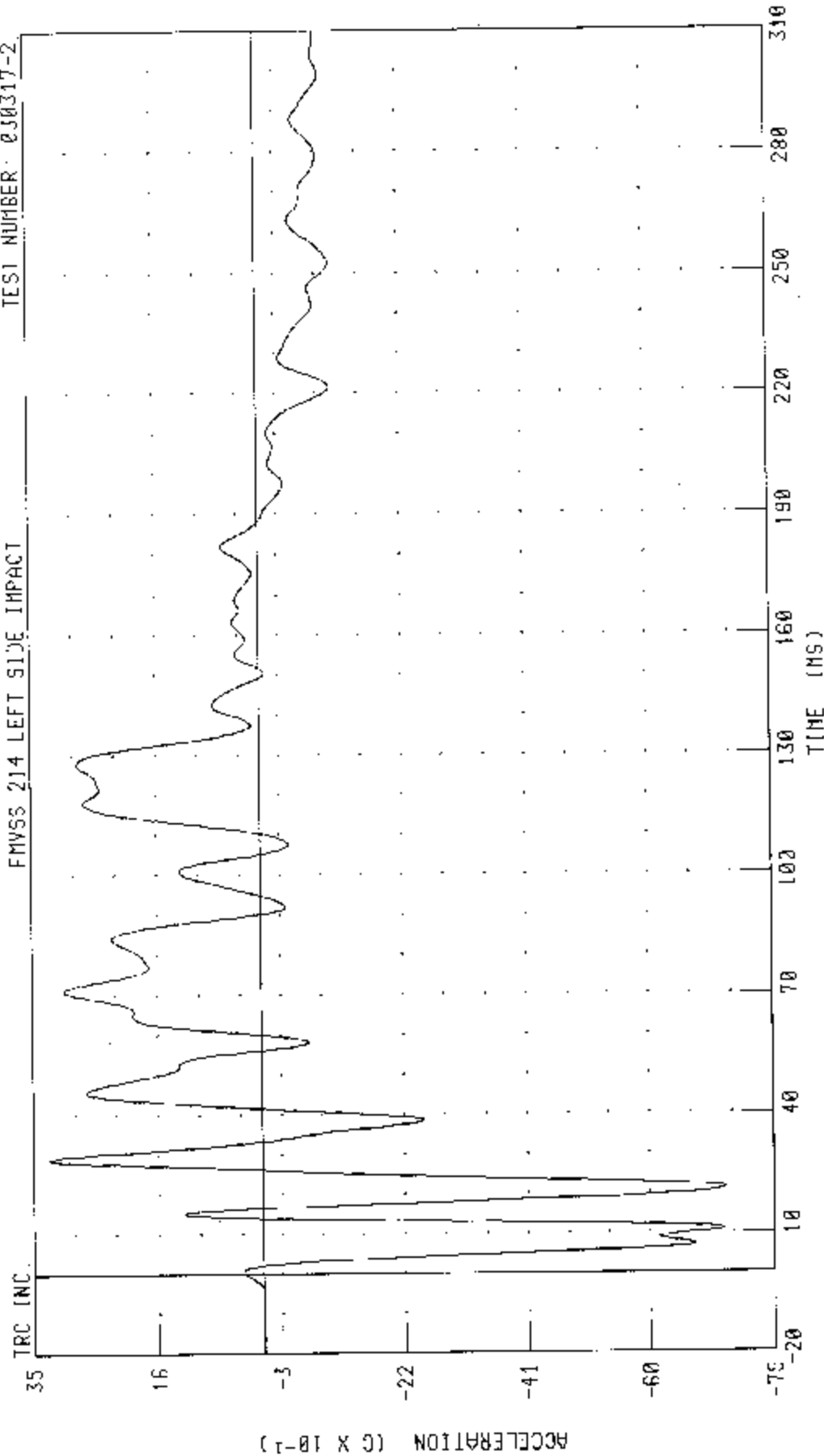
PEAK DATA: 22 40 KPH @ 67 84 MS, 0 00 KPH @ 2 72 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

RIGHT SIDE SILL AT FRONT SEAT Z-AXIS ACCELERATION

TEST NUMBER: 030317-2

FMVSS 214 LEFT SIDE IMPACT



PEAK DATA: 3.25 S B 29 04 MS, -7.17 G @ 23.28 MS

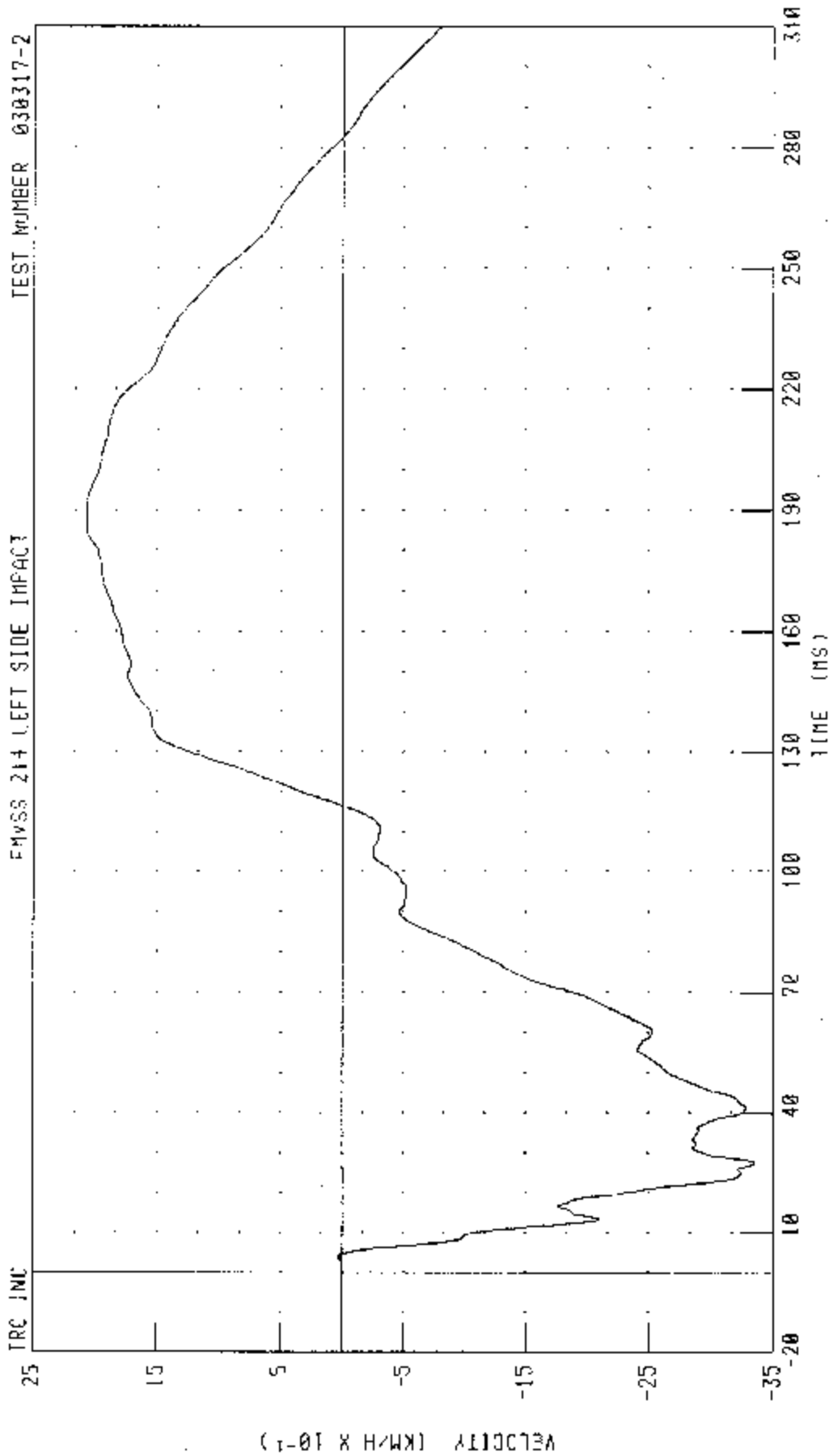
CHANNEL: RFSZG1 FILTER: CH. CLASS 60

55/28 <PH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA C

RIGHT SIDE SILL AT FRONT SEAT Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2



CHANNEL: RFSZV1 FILTER: CH CLASS 130

P=AK DATA 2.08 KM/H @ 188.08 MS; -3.35 KM/H @ 27.44 MS

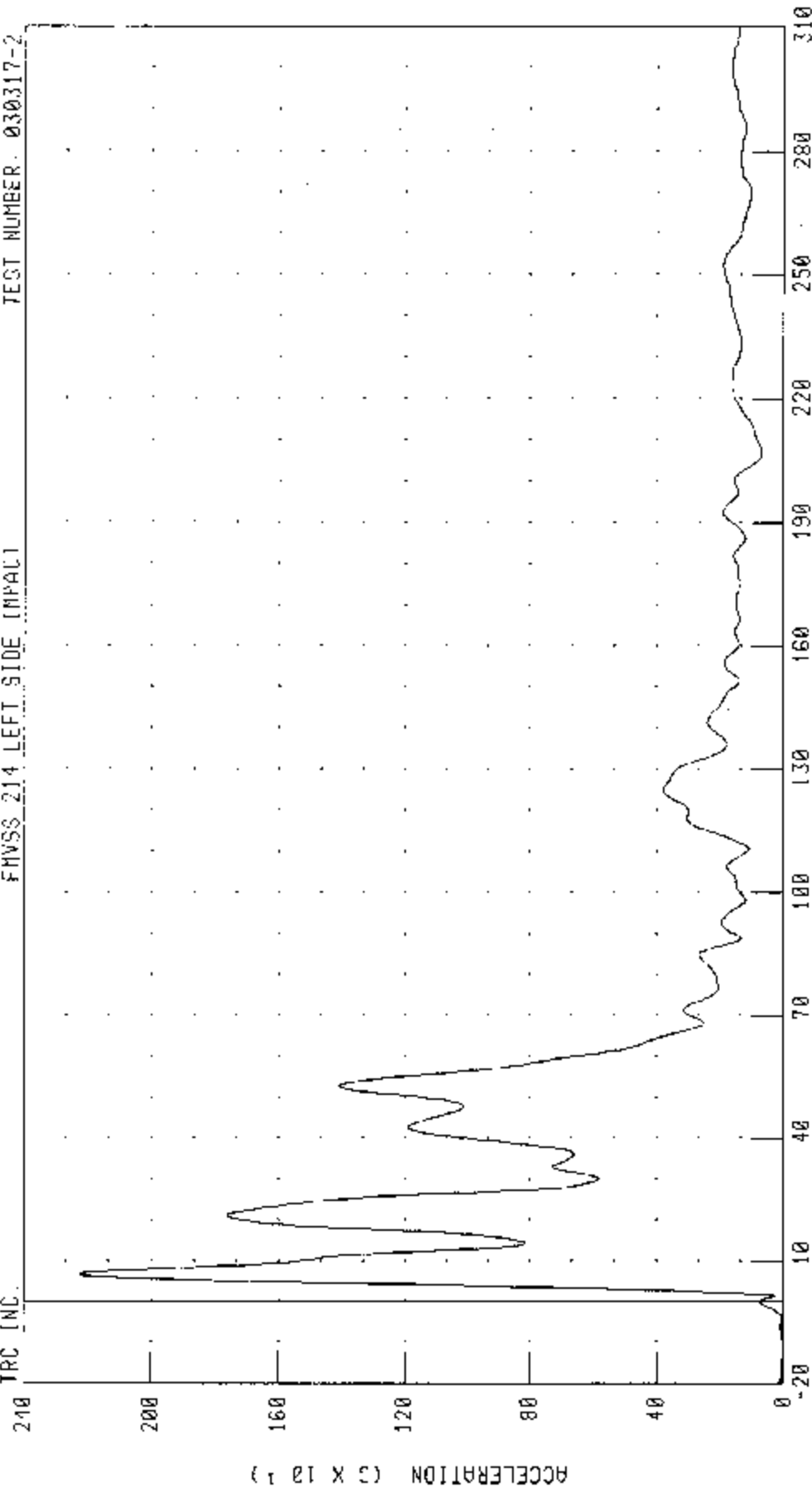


55/28 KPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA E  
RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION

TEST NUMBER: 030317-2

FMVSS 214 LEFT SIDE IMPACT

TRC INC.



ACCELERATION (G X 10<sup>1</sup>)

030317-2

CHANNEL: RFRG1 FILTER: CH CLASS: C0

TIME (MS)

PLAX DATA: 22.26 G @ 6.80 MS, 0.01 G @ -10.56 MS

B-90

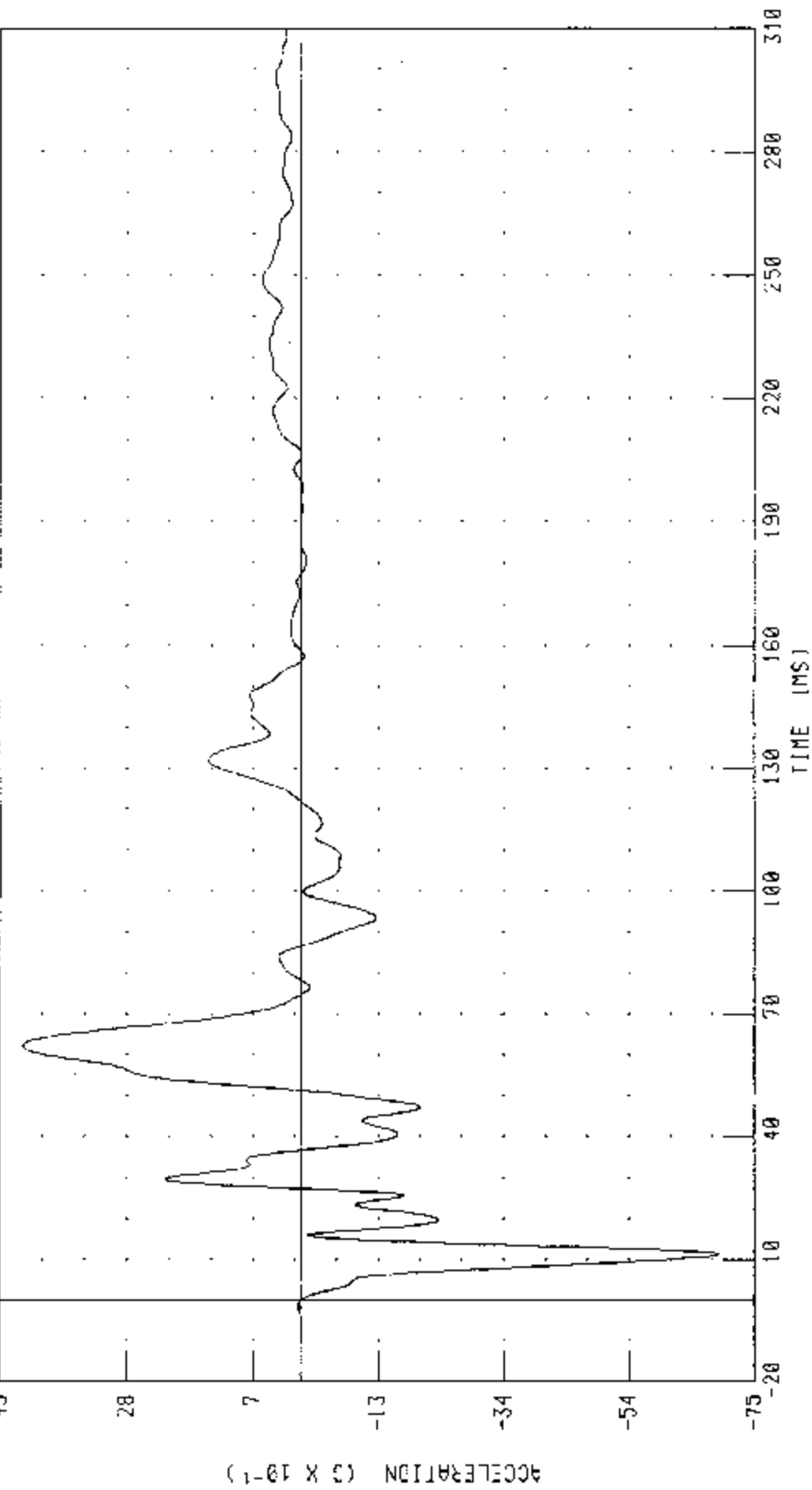
55/28 <PH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

RIGHT SIDE SILL AT REAR SEAT X-AXIS ACCELERATION

TEST NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT

TRC INC

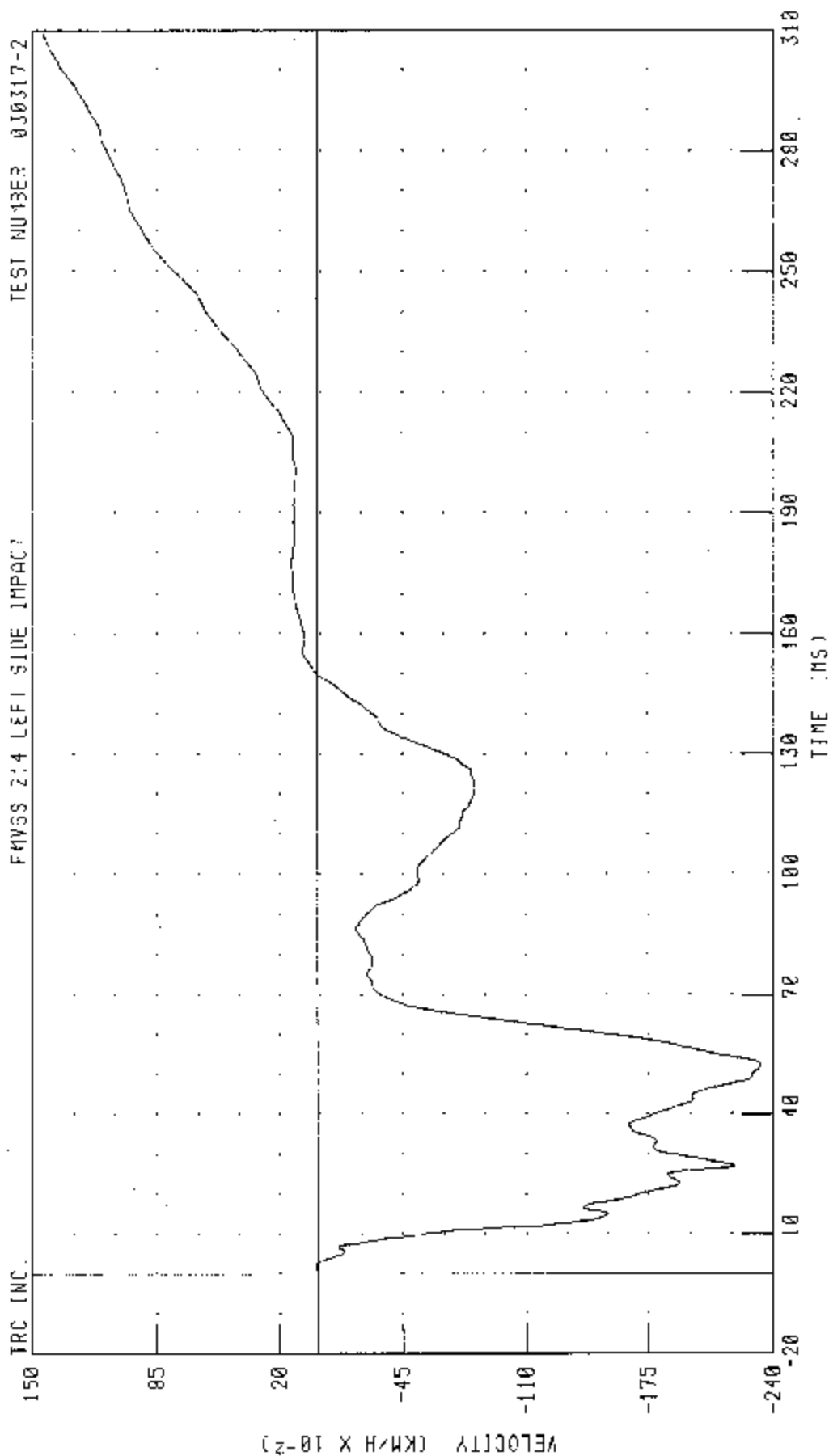


CHANNEL: RRSXC1 FILTER: CH CLASS: 60

PEAK DATA 4.62 G @ 62.32 MS, -7.00 G @ 11.28 MS

55-28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

RIGHT SIDE SILL AT REAR SEAT X-AXIS VELOCITY



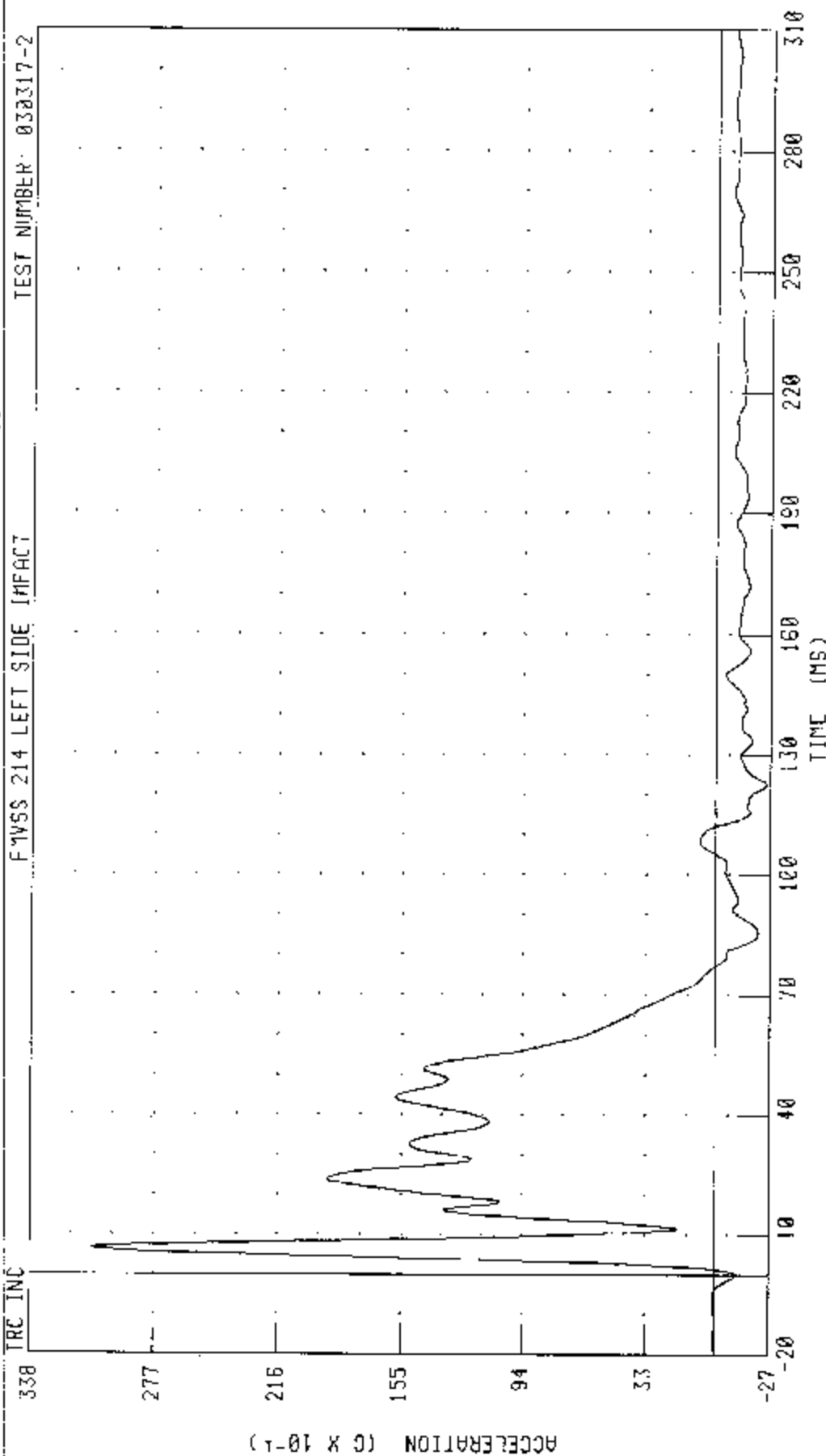
CHANNEL: RRSXVI FILTER CH. CLASS 130

PEAK DATA: 1.45 KM/H @ 310.00 MS; -2.33 KM/H @ 52.40 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING OFF ROAD BARRIER) INID LEFT SIDE OF 2003 MAZDA 6

RIGHT SIDE SILL AT REAR SEAT Y-AXIS ACCELERATION

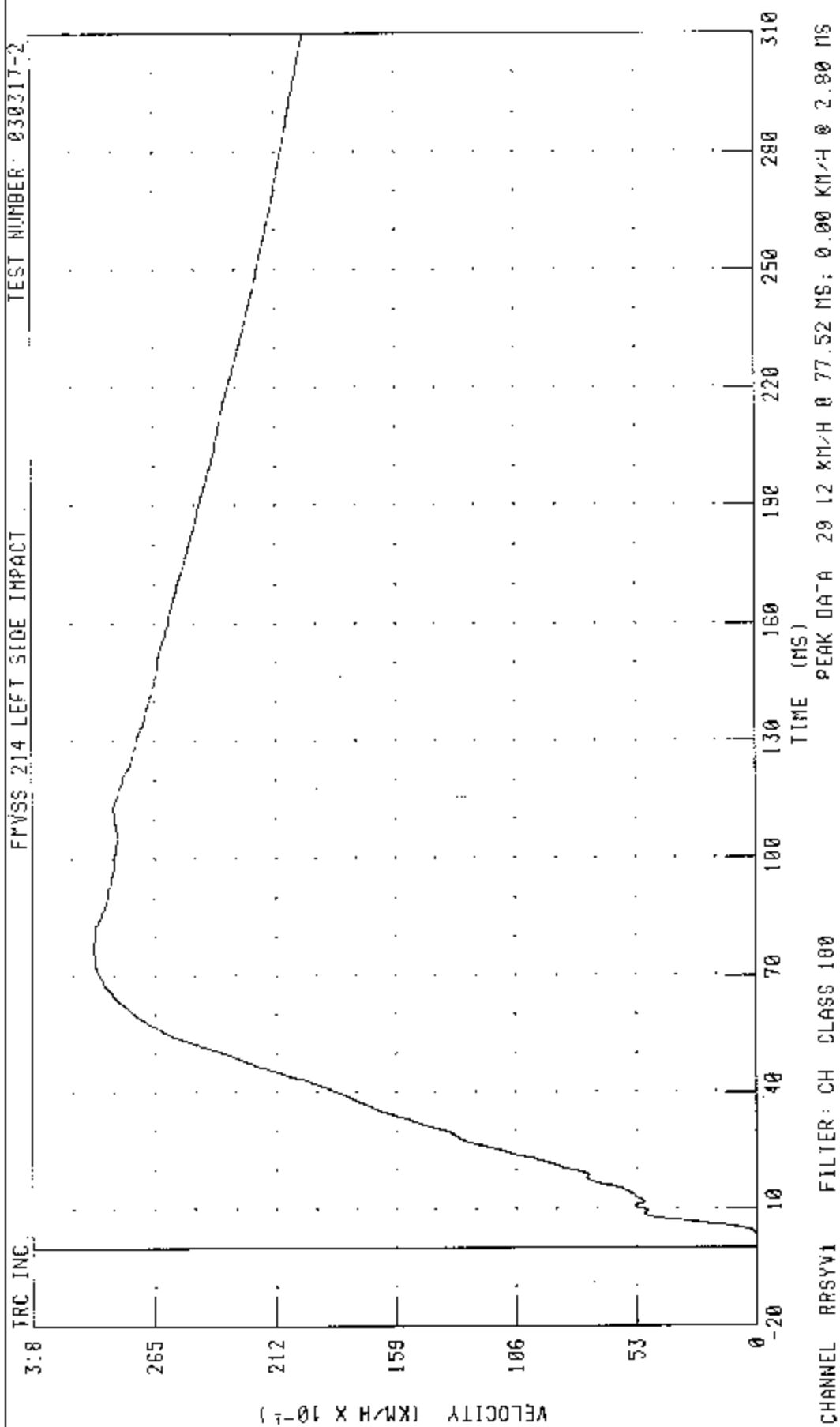
TRC INC FVSS 214 LEFT SIDE IMPACT TEST NUMBER 030317-2



CHANNEL: RRSYG1 FILTER: CH. CLASS 60

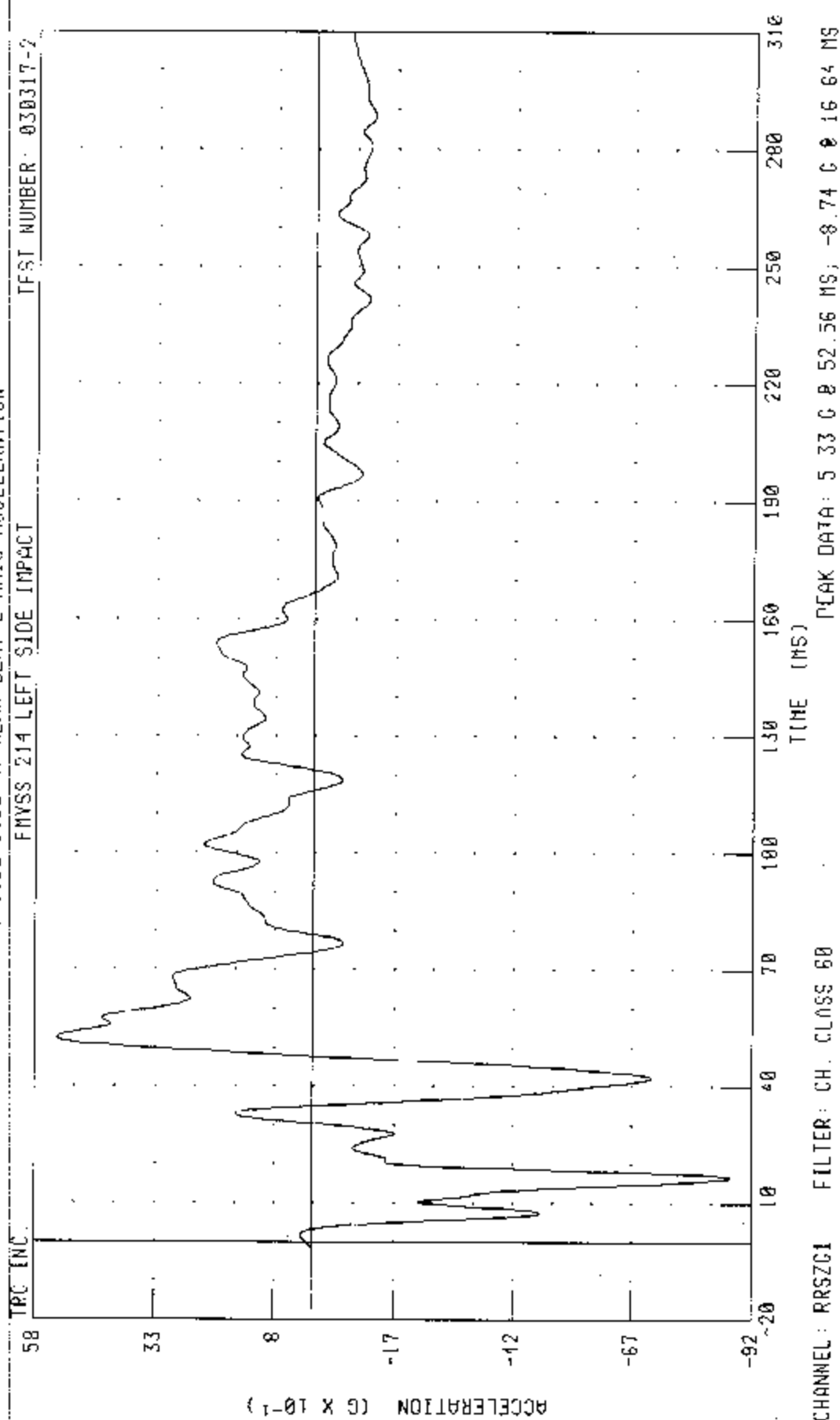
PEAK DATA: 30.90 G @ 6.48 MS; -2.48 G @ 127.72 MS

55/28 XPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 RIGHT SIDE SILL AT REAR SEAT Y AXIS VELOCITY



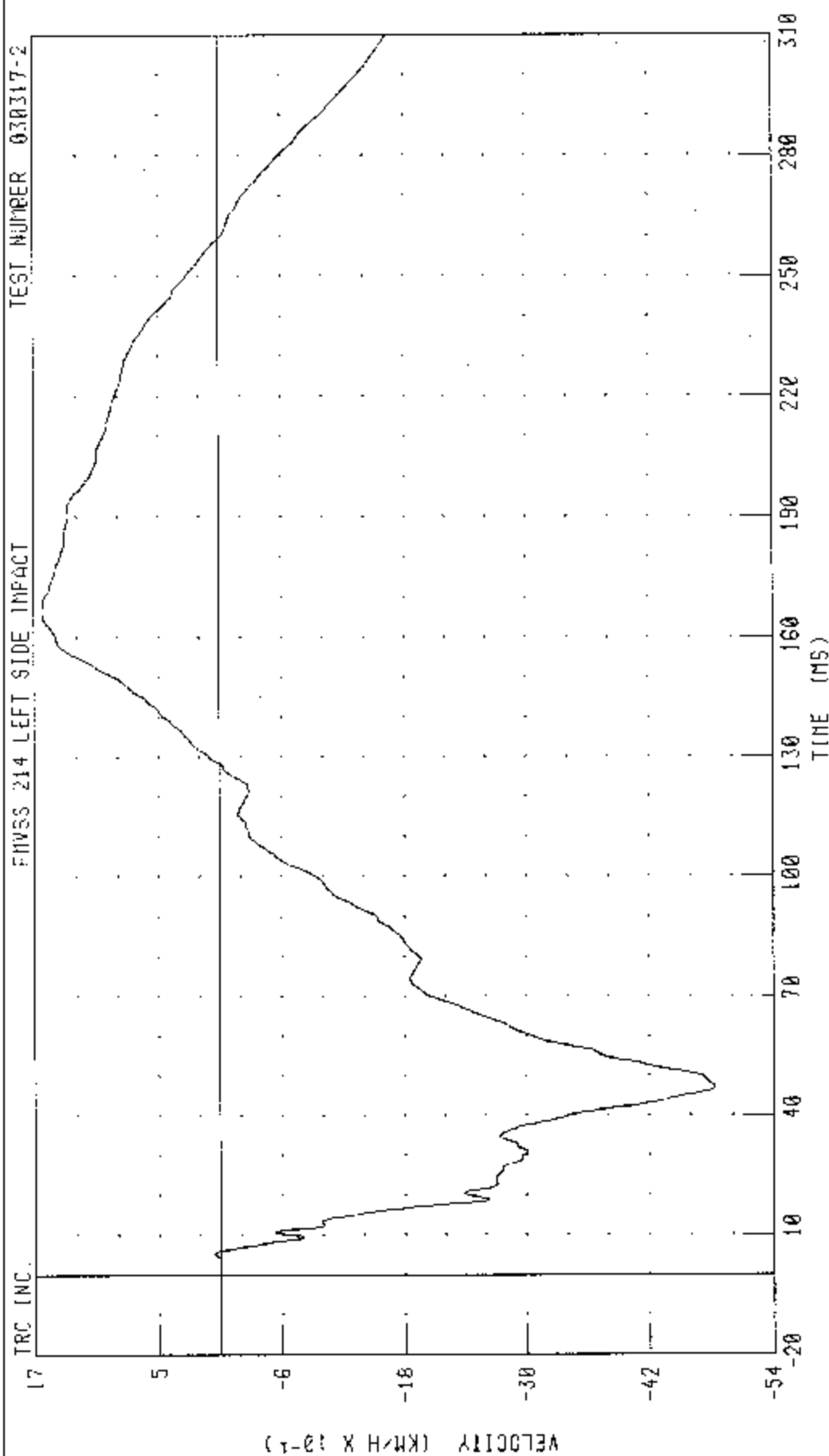
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING AFFORDABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

RIGHT SIDE SILL AT REAR SEAT Z-AXIS ACCELERATION



55/28 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

RIGHT SIDE CILL AT REAR SEAT 7-AXIS VELOCITY



CHANNEL: RRSZV1 FILTER: CH CLASS 180

PEAK DATA 1.73 KM/H @ 166 40 MS; -4.84 KM/H @ 47 12 MS

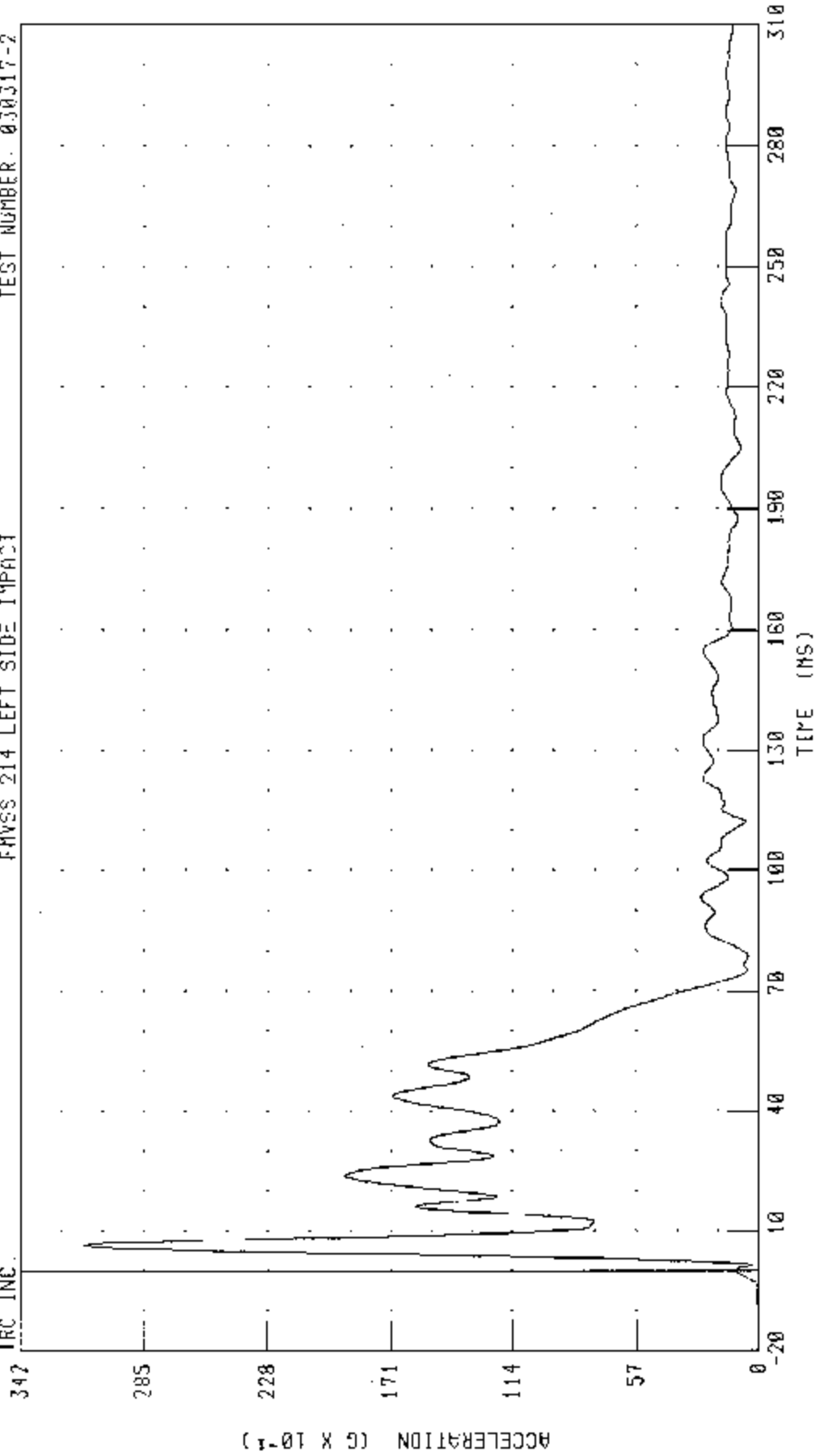
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING OFFFORMABLE BARRIER) INTO LEFT SIDE OF 2403 MA70A 6

RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION

TEST NUMBER: 030317-2

FIVES 214 LEFT SIDE IMPACT

TRC INC.

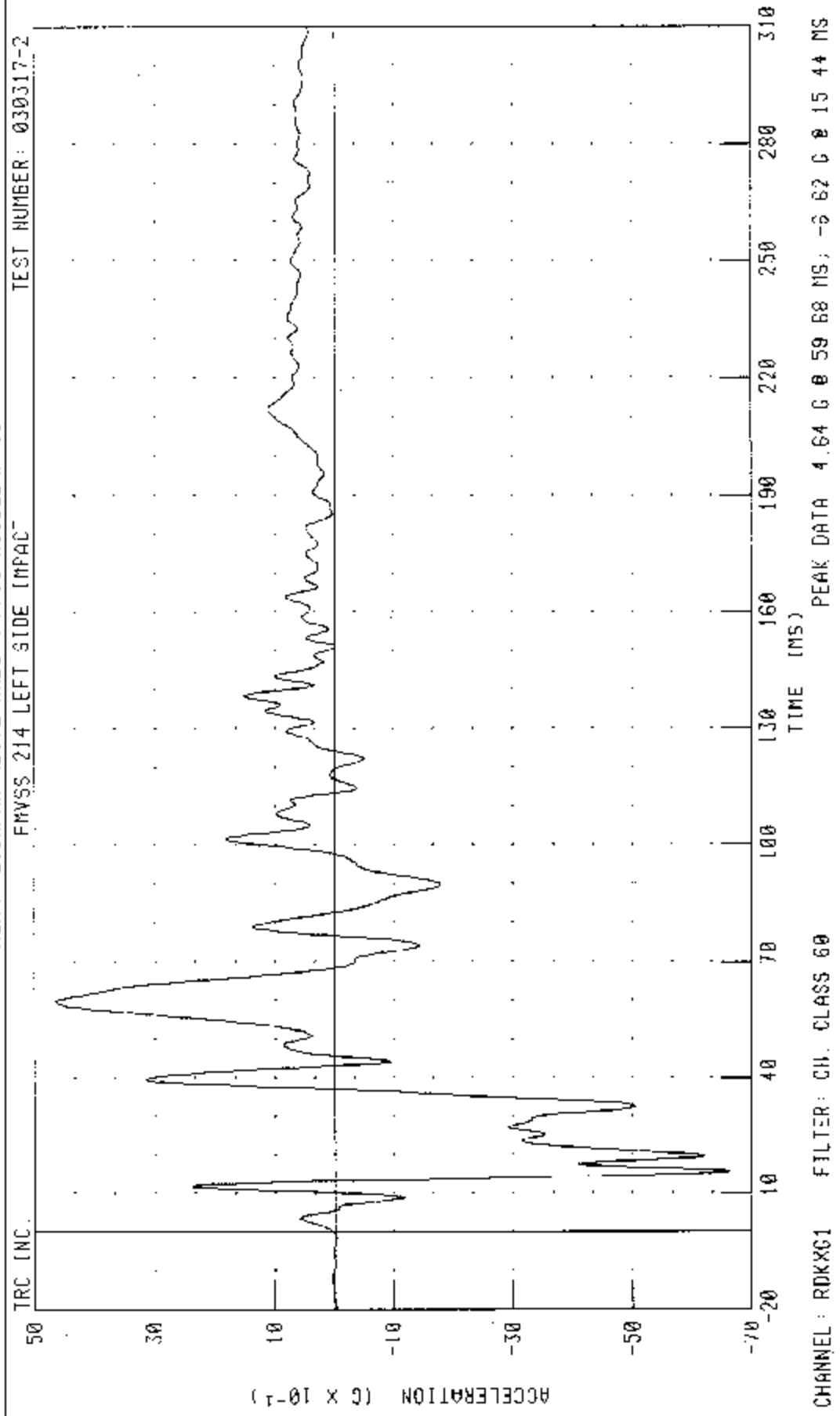


CHANNEL: RRSRG1 FILTER: CH CLASS: 60

PEAK DATA: 31.22 G @ 6.56 MS, 0.00 G @ -10.64 MS



55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
REAR FLOORPAN ABOVE AXLE X AXIS ACCELERATION



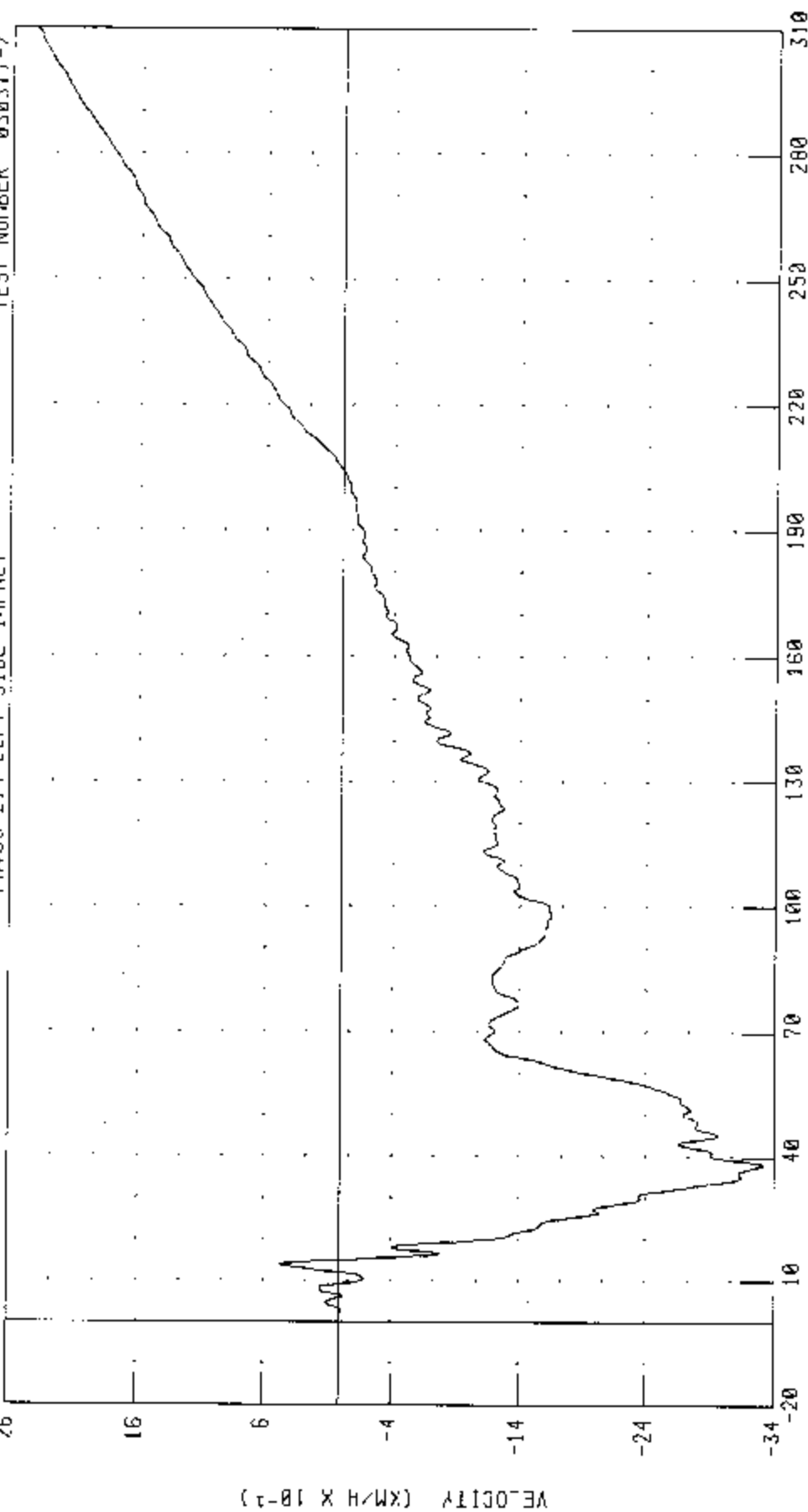
55/28 <PH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) IN LEFT SIDE OF 2005 MA70A 6

R=OR FLOORPAN ABOVE AXLE X-AXIS VELOCITY

TRC INC

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2



CHANNEL: RUKXXV1 FILTER: CH. CLASS 180

TIME (MS)

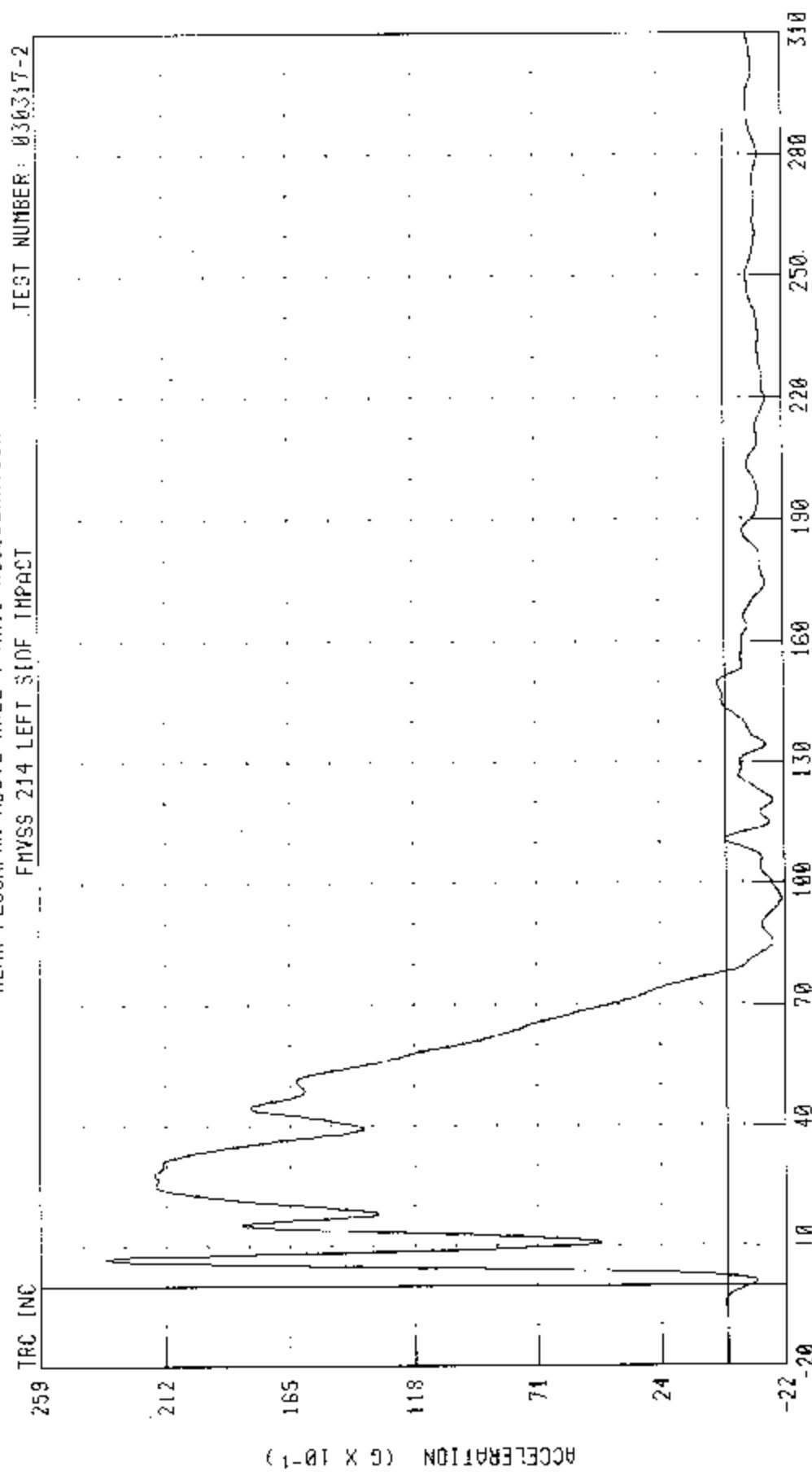
PEAK DATA: 2.41 KM/H @ 310.00 MS; -3.32 KM/H @ 38.16 MS

55/28 KPH 90 DEGRFF SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MA7DA R

REAR FLOORPAN ABOVE AXLE Y-AXIS ACCELERATION

TEST NUMBER: 030317-2

FMVSS 214 LEFT SIDE IMPACT



PEAK DATA: 23.59 G @ 6.72 MS; -2.07 G @ 96.00 MS

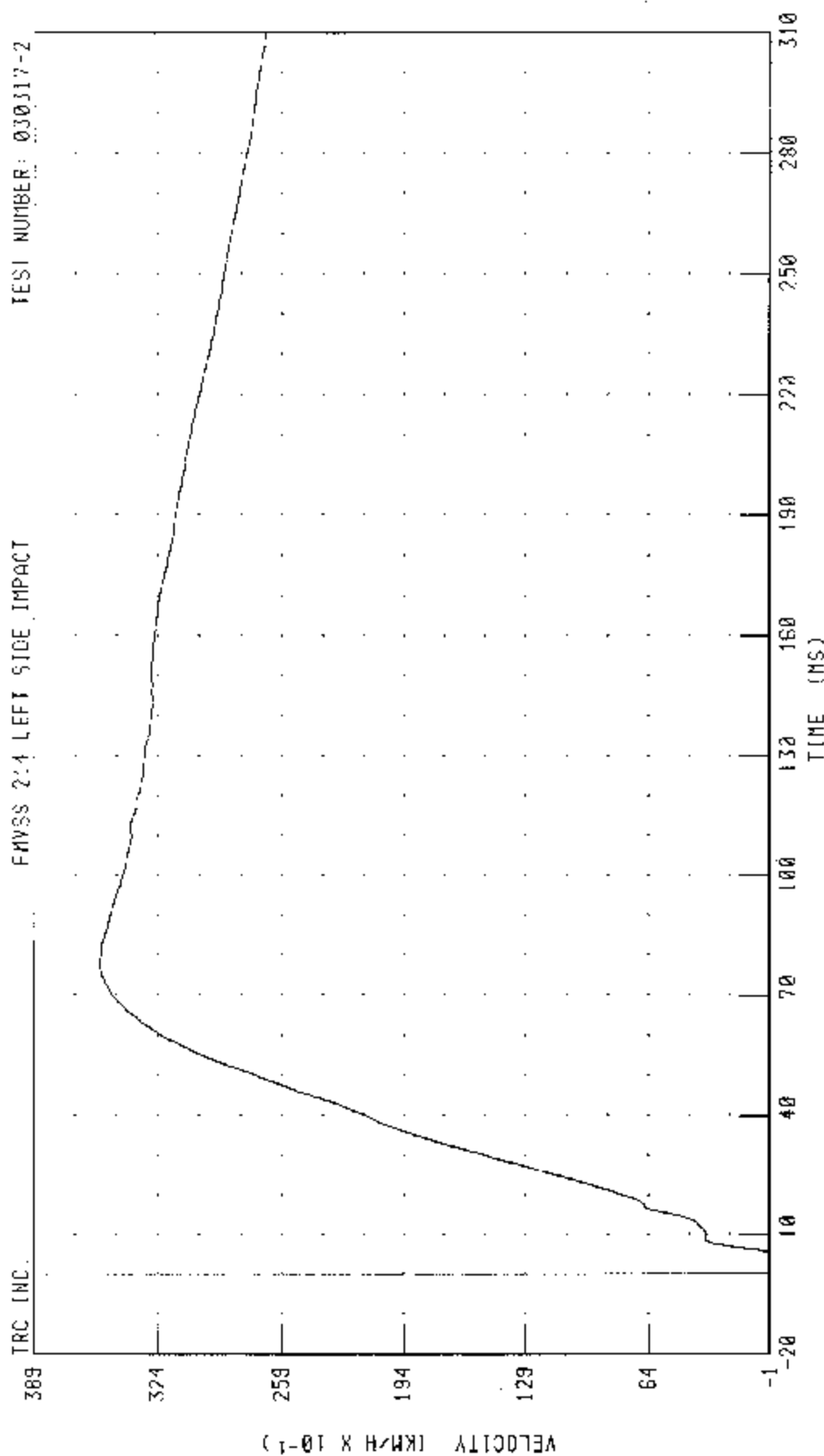
CHANNEL: RDKYC1 FILTER: CH. CLASS 60

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

REAR FLOORPAN ABOVE AXLE Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

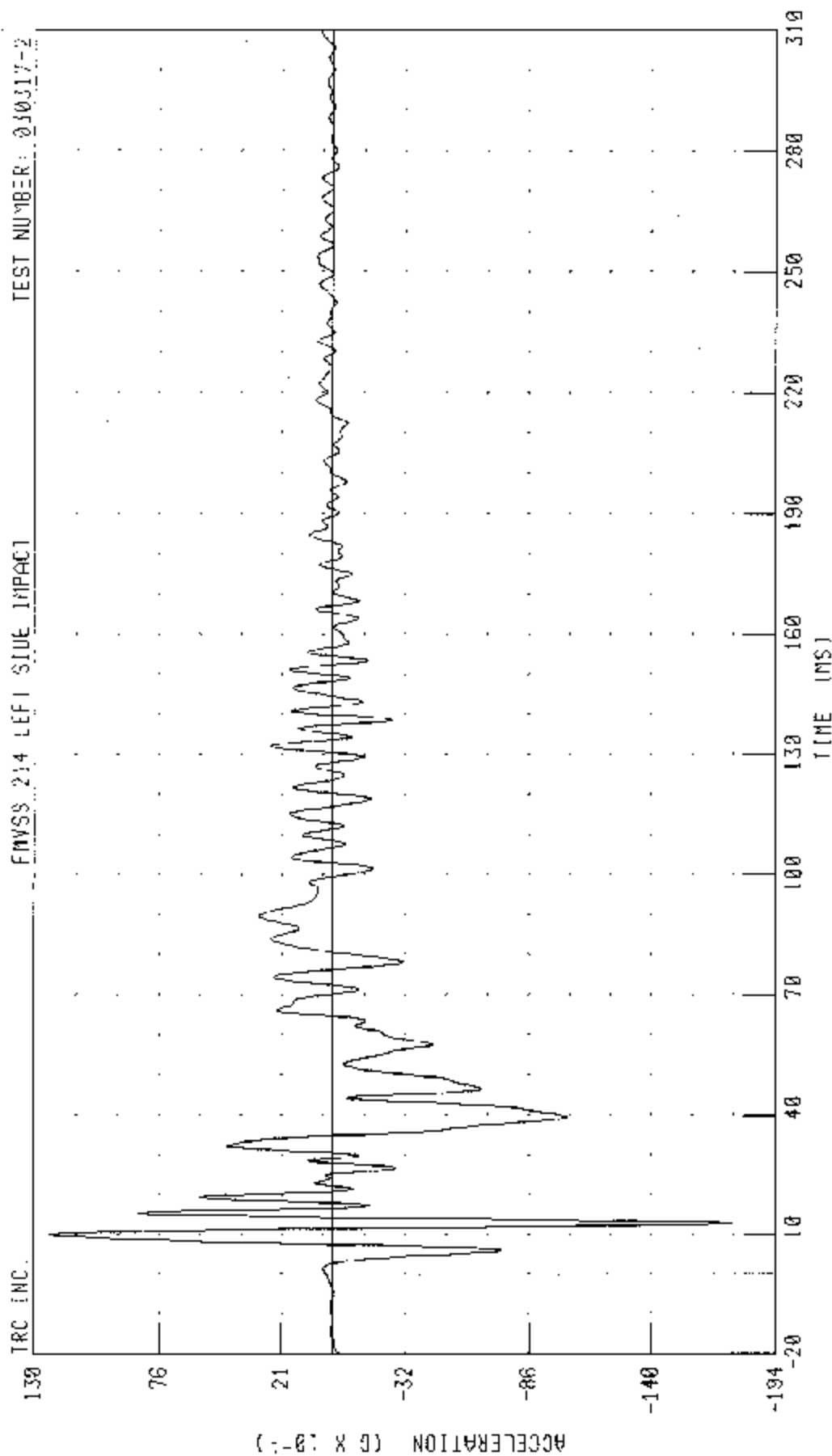
TEST NUMBER: 030317-2



CHANNEL: RDXYY1 FILTER: CH. CLASS 180

PEAK DATA: 35.46 KM/H @ 77.60 MS; -0.16 KM/H @ 4.56 MS

55/23 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA B  
 REAR FLOORPAN ABOVE AXLE Z AXIS ACCELERATION

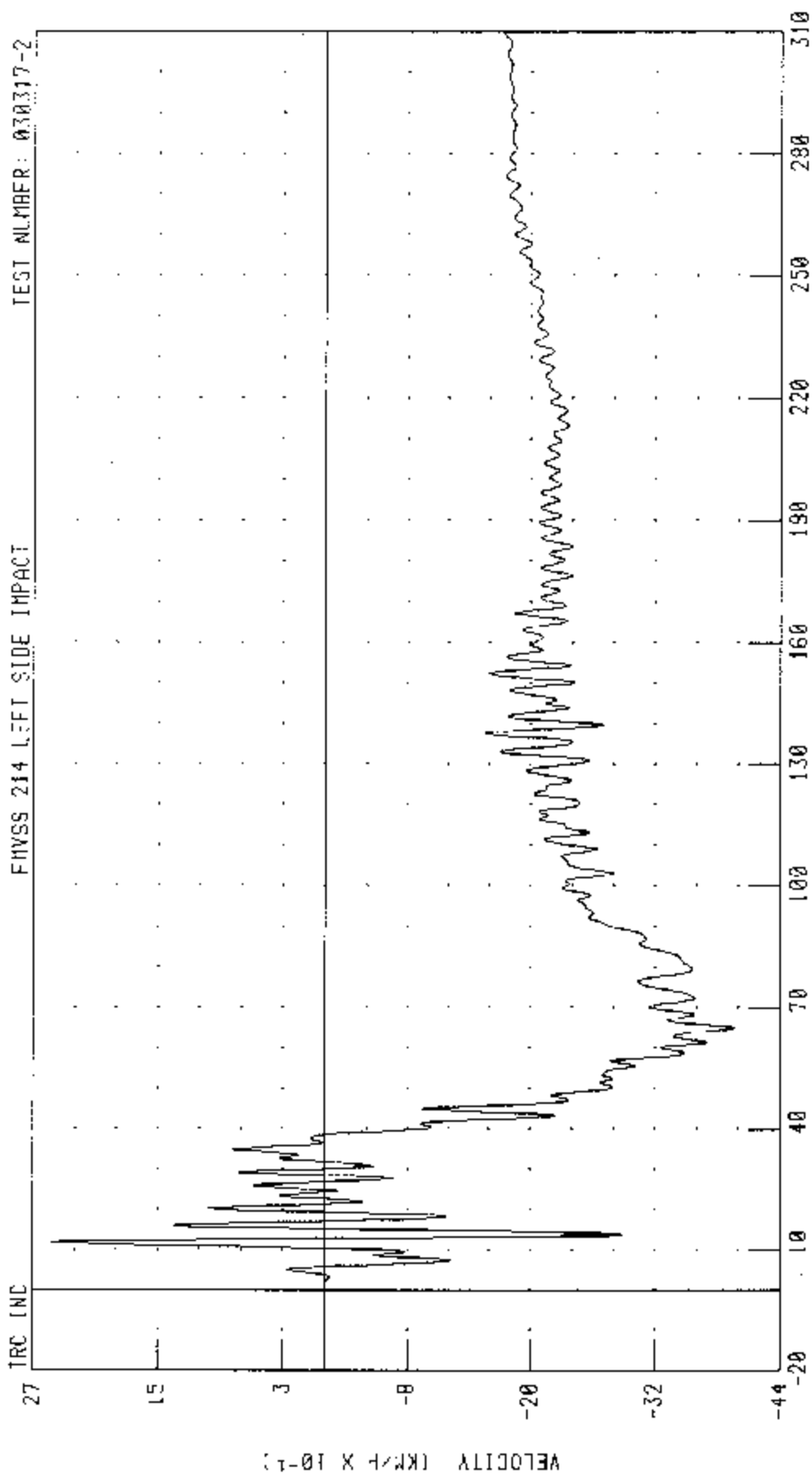


CHANNEL: RDKZC1 FILTER: CH CLASS 60 PEAK DATA: 12.32 G @ 10.00 MS, -17.58 G @ 17.88 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 REAR FLOORPAN ABOVE AXLE Z-AXIS VELOCITY

TEST NUMBER: 030317-2

FMVSS 214 LEFT SIDE IMPACT



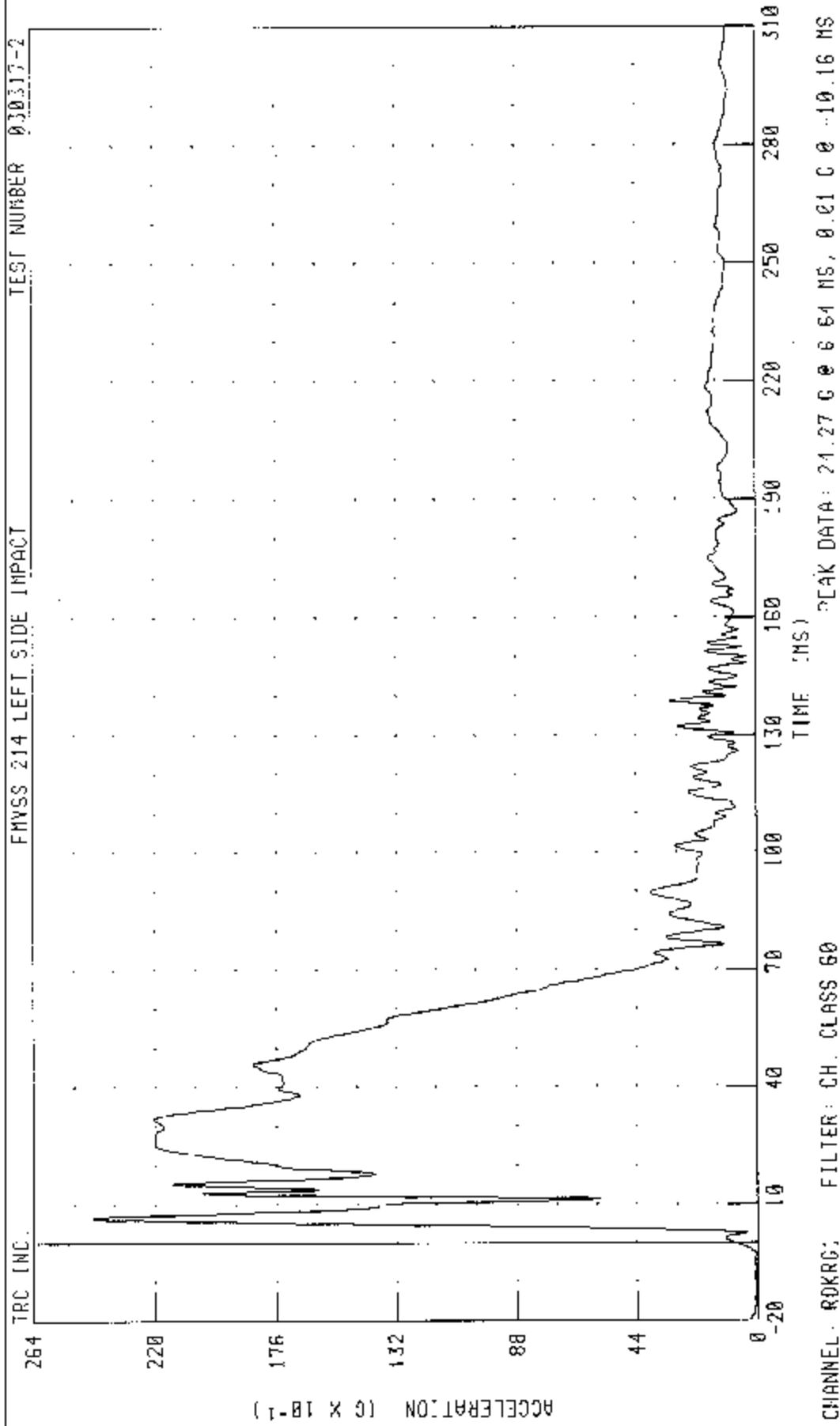
TIME (MS)

PEAK DATA: 2 63 KPH @ 11.92 MS, -3 96 KPH @ 64.96 MS

CHANNEL: RDK2V1 FILTER: CH. CLASS 100

55/28 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION



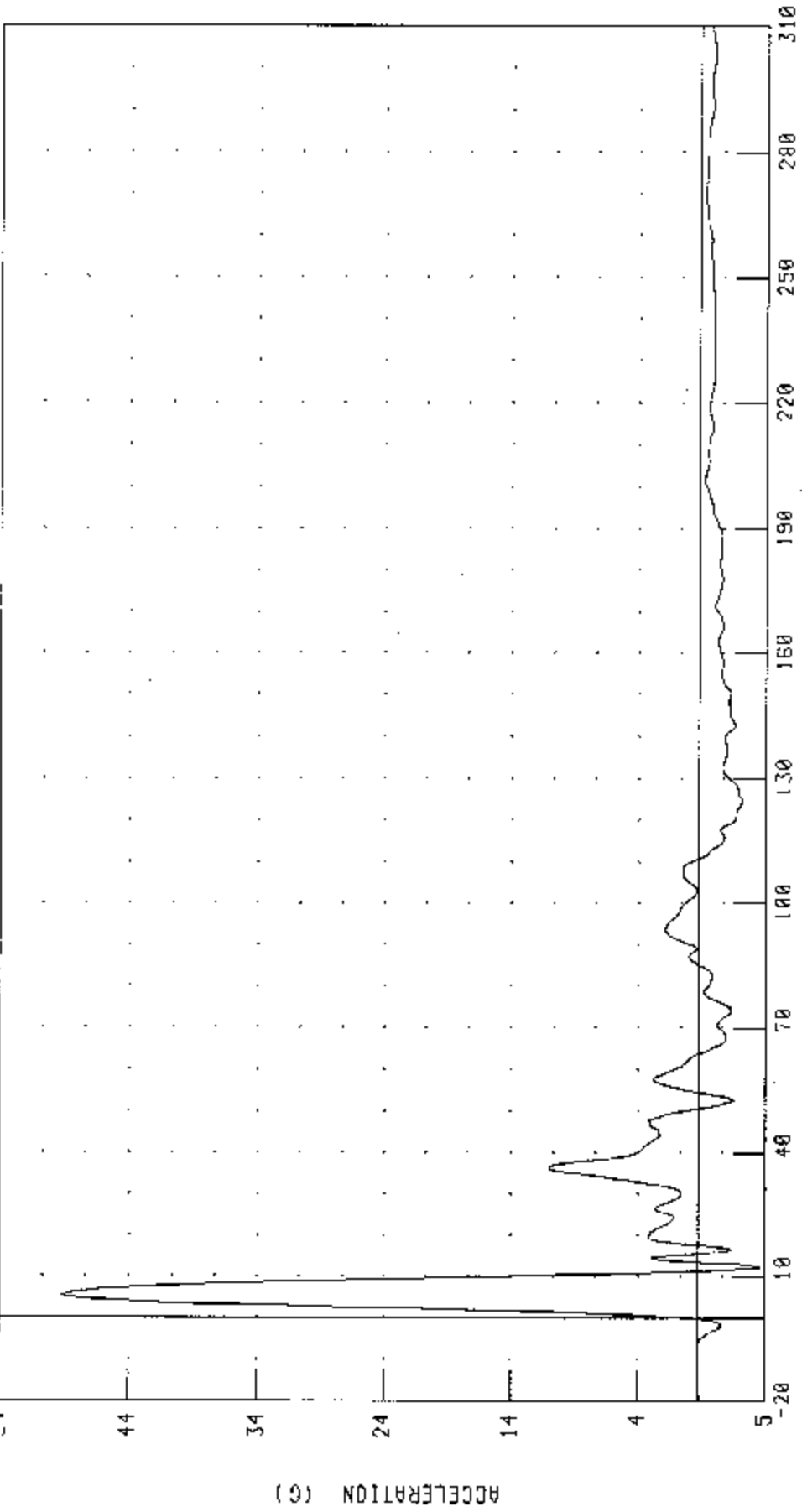
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION

TEST NUMBER: 030317-2

FMVSS 214 LEFT SIDE IMPACT

TRC INC.



CHANNEL: LFSY01 FILTER: CH. CLASS 60 PEAK DATA 49.96 G @ 5.44 MS, -4.78 G @ 12.24 MS

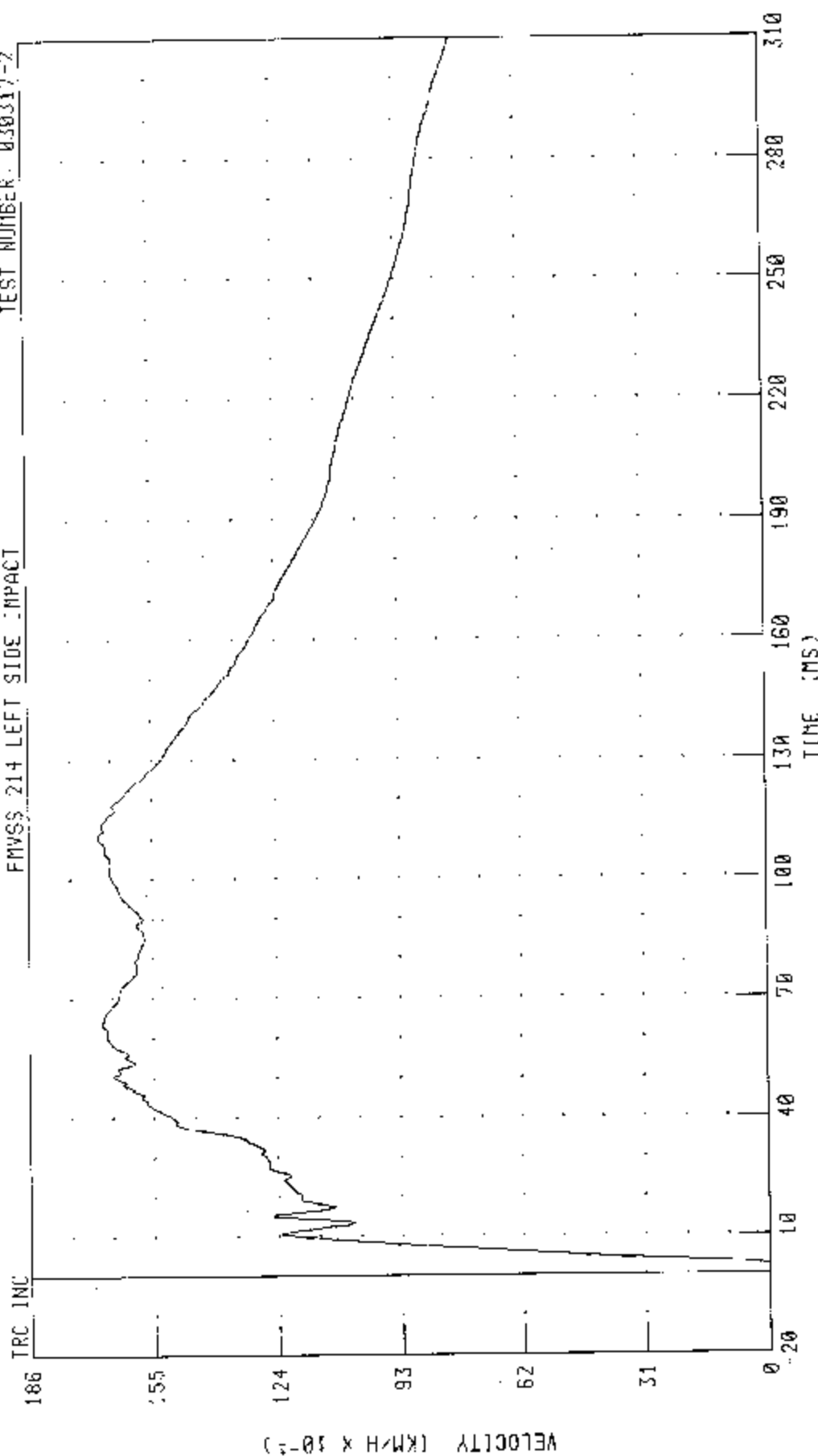


55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT SIDE SILL AT FRONT SEAT Y-AXIS VELOCITY

TEST NUMBER: 030317-2

FMVSS 214 LEFT SIDE IMPACT



PEAK DATA: 16.88 KM/H @ 110.56 MS; -0.86 KM/H @ 1.68 MS

CHANNEL: LFSYV; FILTER: CH. CLASS 180

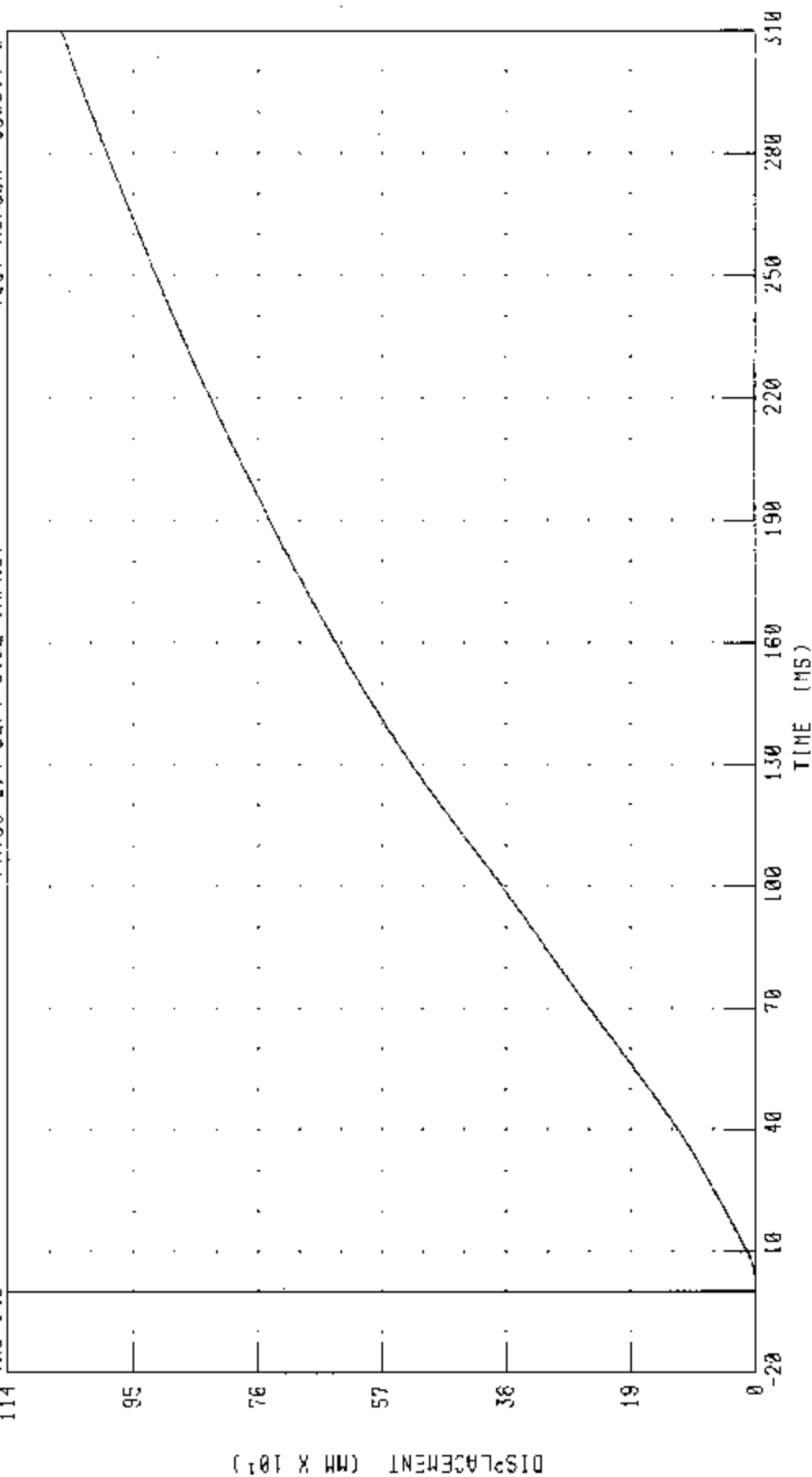
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT SIDE SILL AT FRONT SEAT Y-AXIS DISPLACEMENT

TRC INC

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2



CHANNEL: LFSV01 FILTER CH. CLASS 180

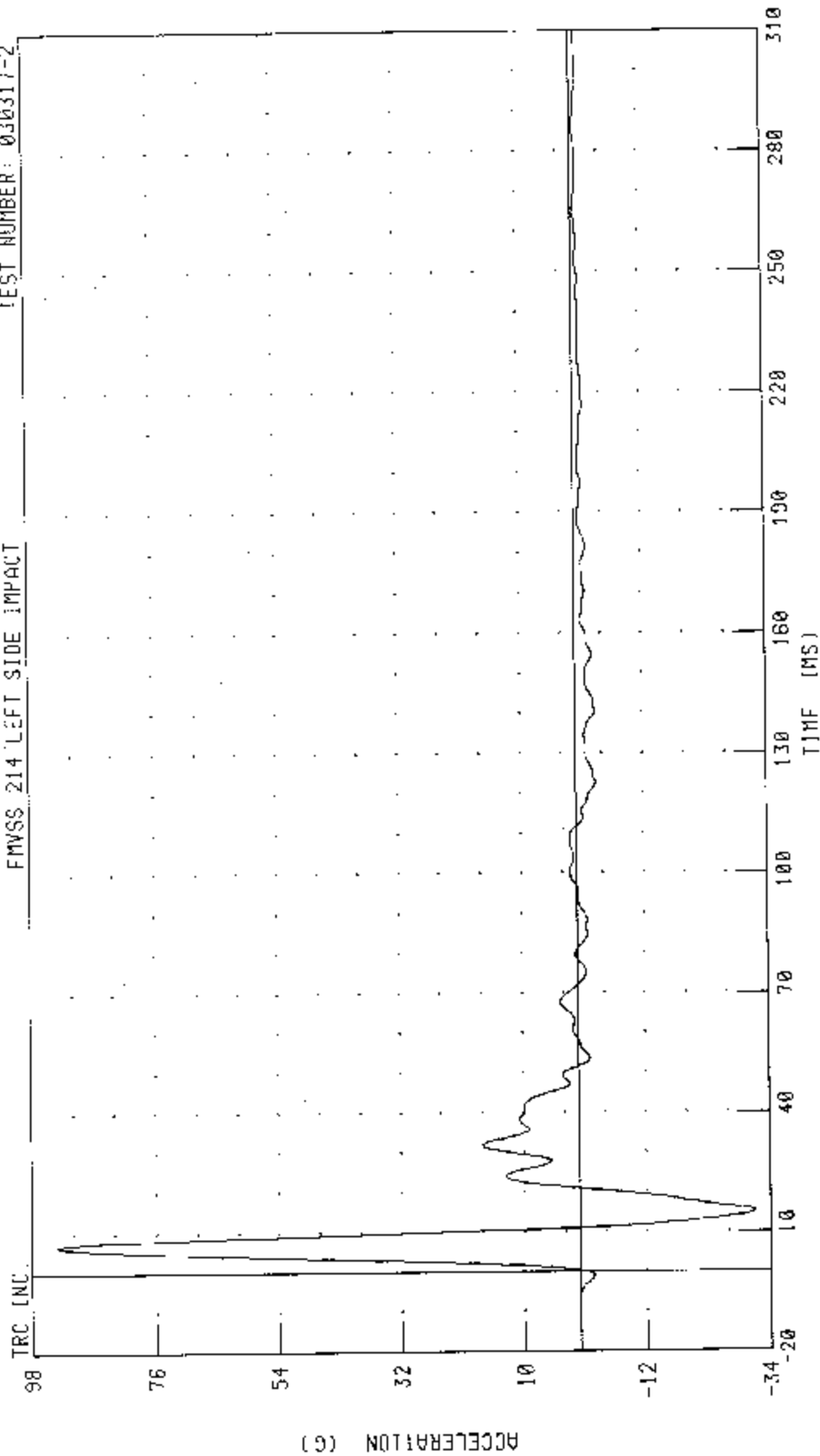
PEAK DATA: 1059 15 M1 @ 310.00 MS: -0 02 MM @ 2.08 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2023 MA7DA 6

LEFT SIDE SILL AT REAR SEAT Y-AXIS ACCELERATION

TEST NUMBER: 030317-2

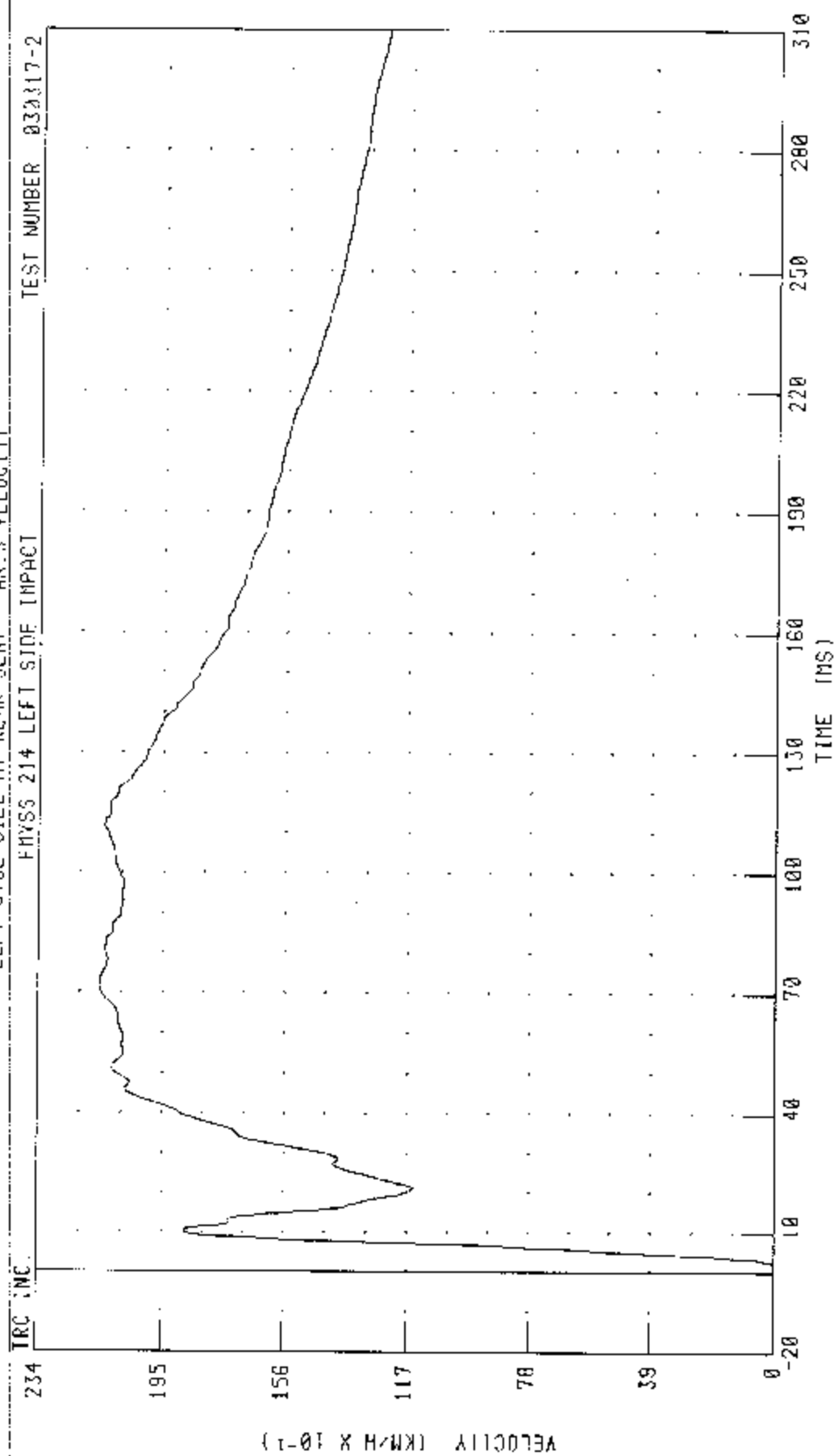
FMVSS 214 LEFT SIDE IMPACT



PEAK DATA: 93.51 G @ 6.96 MS -31.47 G @ 15.04 MS

CHANNEL: LRSYG: FILTER: CH. CLASS 60

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 LEFT SIDE SILL AT REAR SEAT V-AXIS VELOCITY

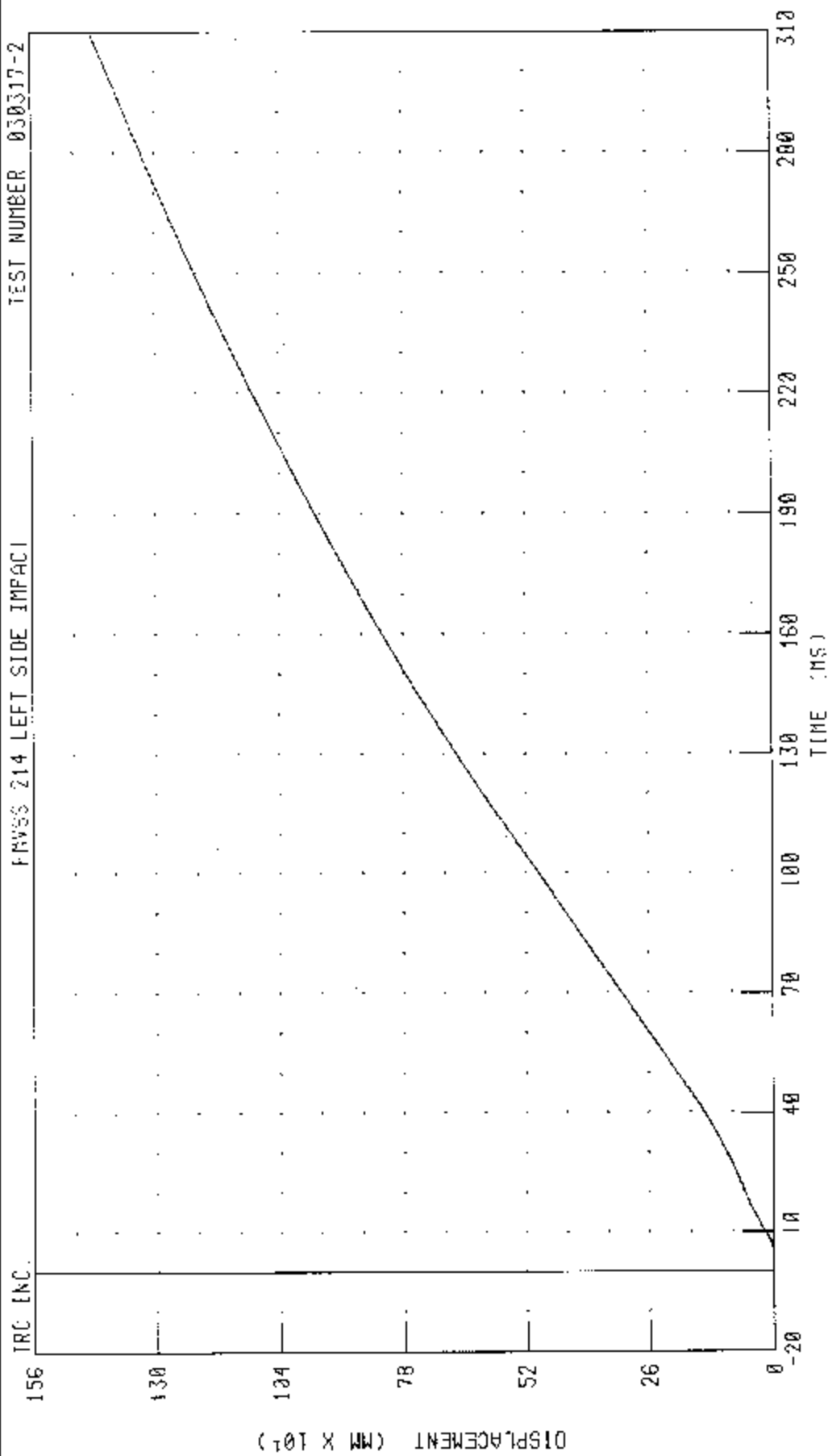


PEAK DATA: 21.48 KM/H @ 71.44 MS; -0.03 KM/H @ 1.76 MS

CHANNEL: LRSYV1 FILTER: CIP CLASS 180

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

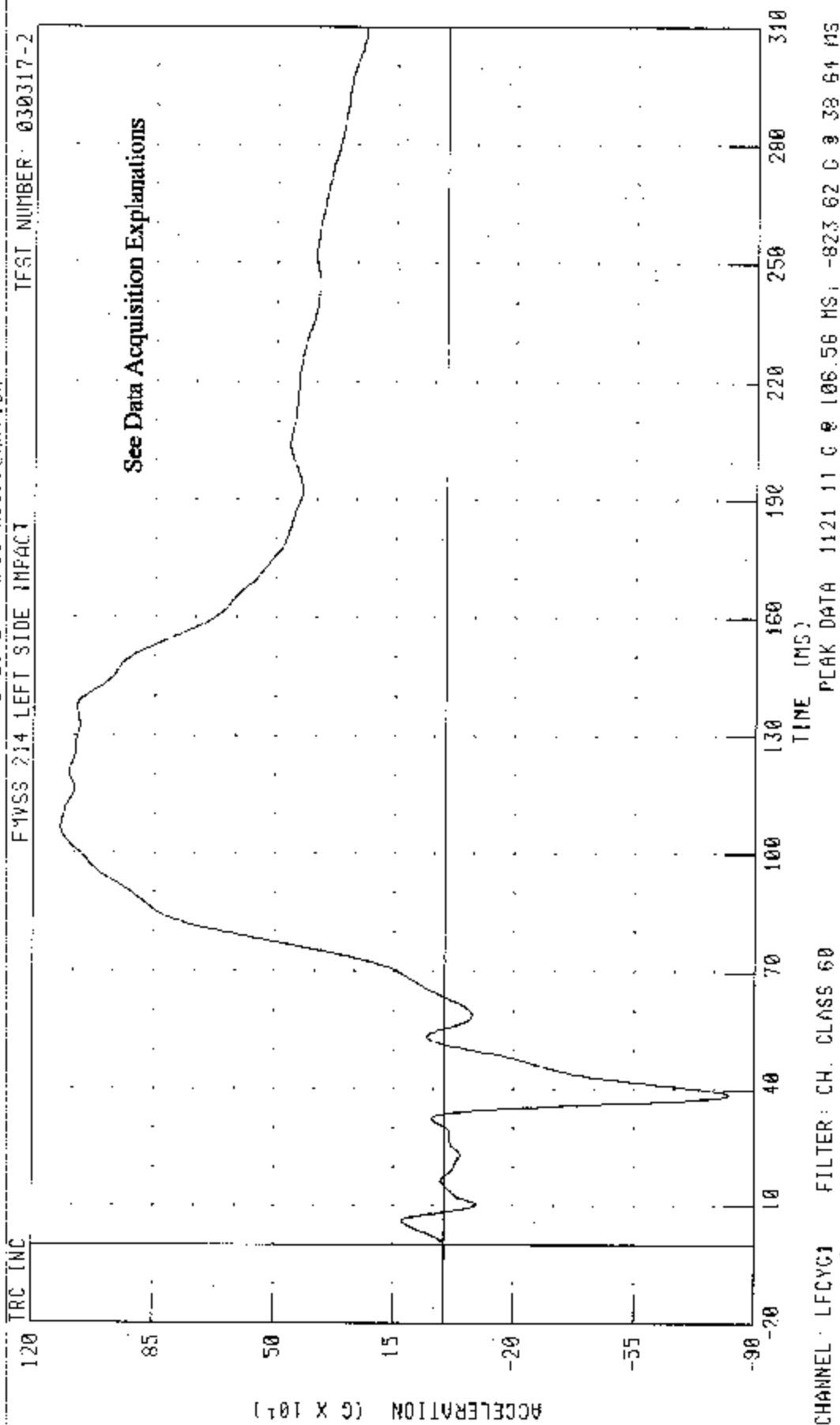
LEFT SIDE SILL AT REAR SEAT Y-AXIS DISPLACEMENT



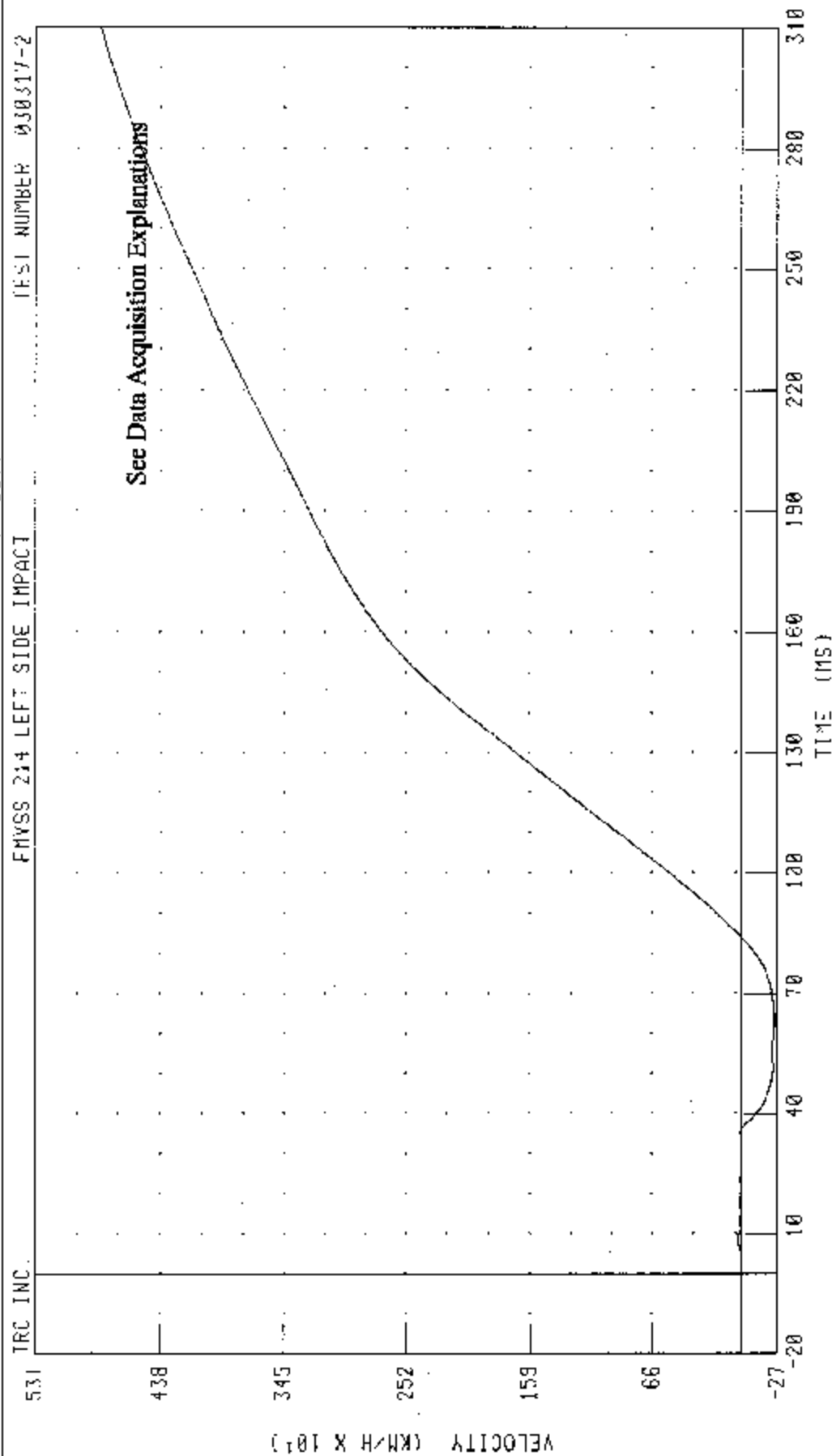
CHANNEL: LRSYD1 FILTER CH. CLASS 180

PEAK DATA: 1435.46 MM @ 310.00 MS, -0.01 MM @ 2.24 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
LEFT FRONT DOOR ON CENTERLINE Y AXIS ACCELERATION



55/28 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
LEFT FRONT DOOR ON CENTERLINE Y-AXIS VELOCITY



TEST NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT

TRC INC.

CHANNEL: \_FCYV1 FILTER: CH. CLASS 180 PEAK DATA 4325.54 KM/H @ 310 00 MS; -252 90 KM/H @ 63 28 MS

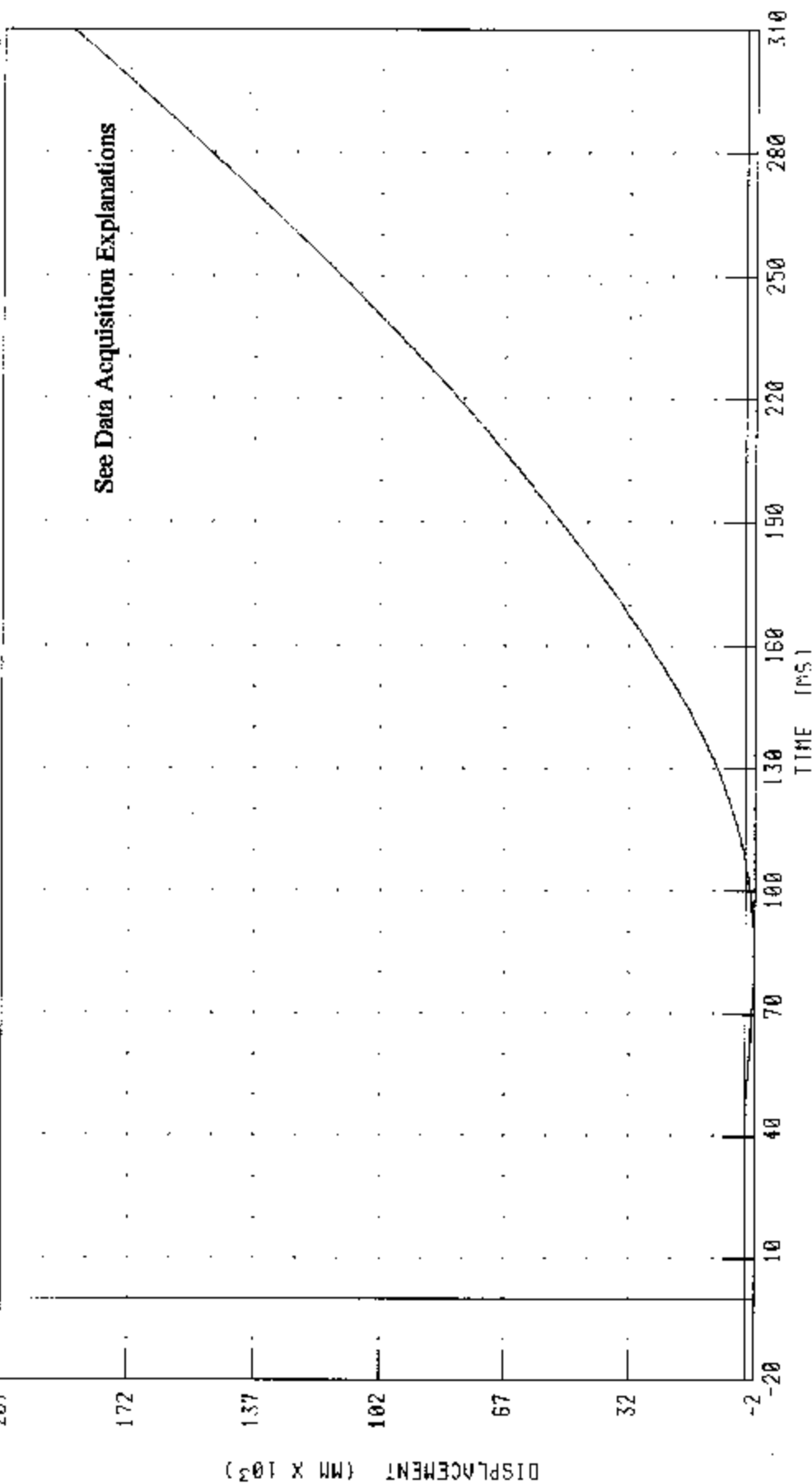
55/28 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT FRONT DOOR ON CENTERLINE Y-AXIS DISPLACEMENT

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 032317-2



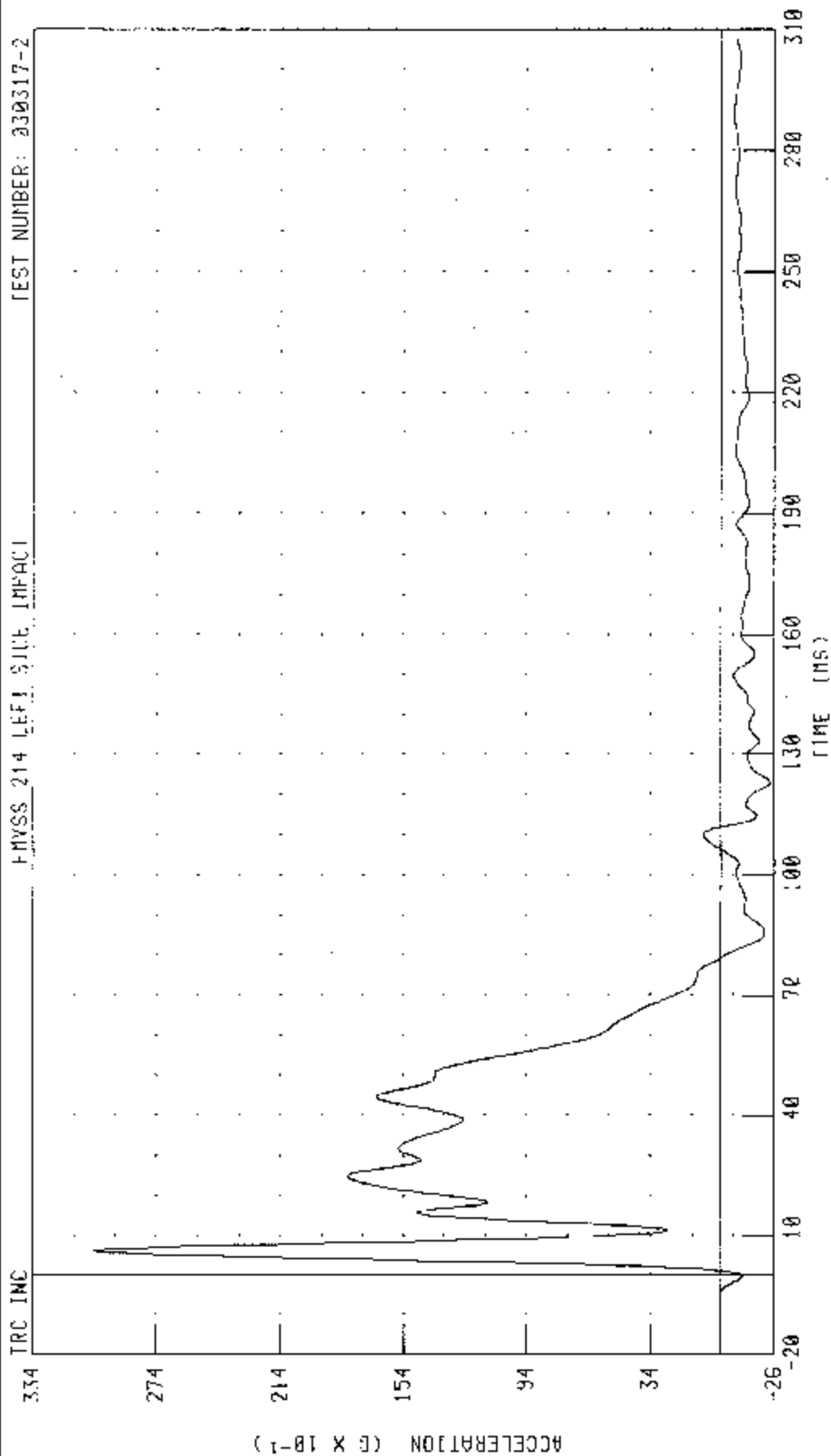
CHANNEL: LFCYD1 FILTER: CH. CLASS 100

TIME (MS)

PEAK DATA: 188612 48 MM @ 310 00 MS; -2502 32 MM @ 84 16 MS



55.23 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS ACCELERATION



CHANNEL: RRTV01 FILTER: CH. CLASS 50 PEAK DATA: 30.41 G @ 6.16 MS, -2.40 G @ 122.88 MS

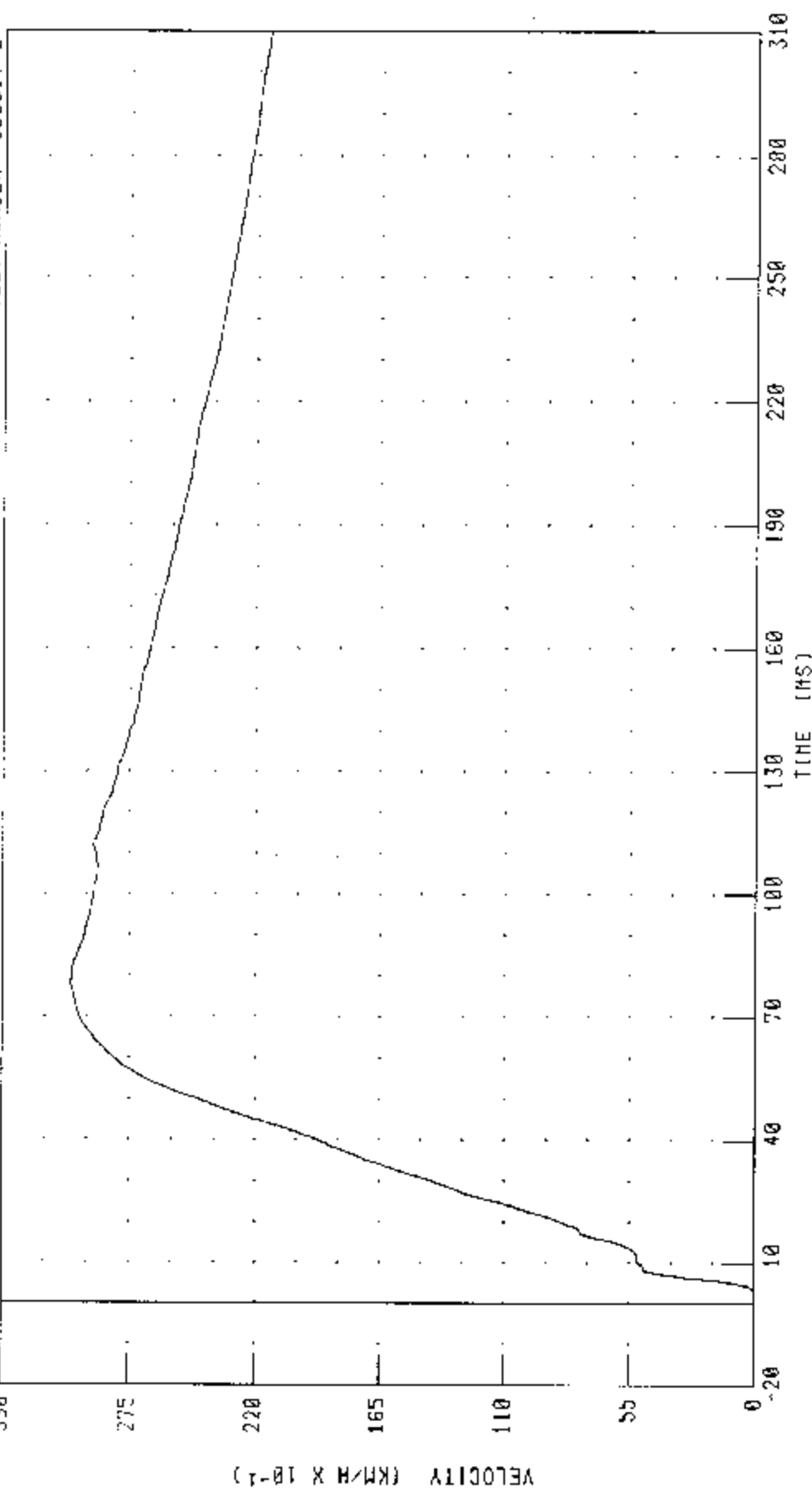
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

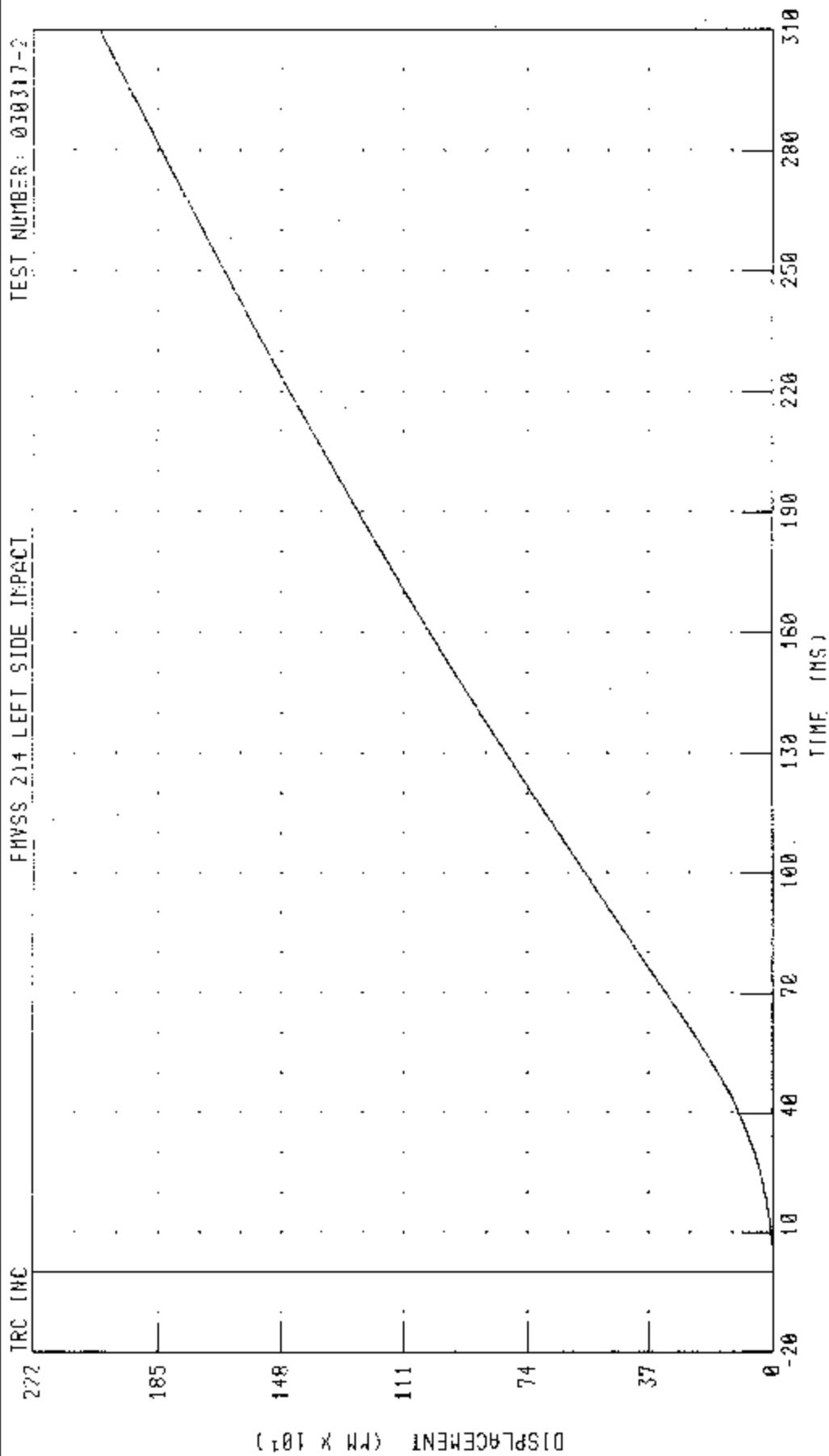
TEST NUMBER 030317-2



CHANNEL: RRTV1 FILTER: CH CLASS 180

PEAK DATA 30 02 KM/H @ 78 24 MS, -0.01 KM/H @ 2 32 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS DISPLACEMENT



CHANNEL: RRTY01 FILTER: CH CLASS 130

PEAK DATA: 2072 86 MM @ 310 00 MS; 0.00 MM @ 2 72 MS

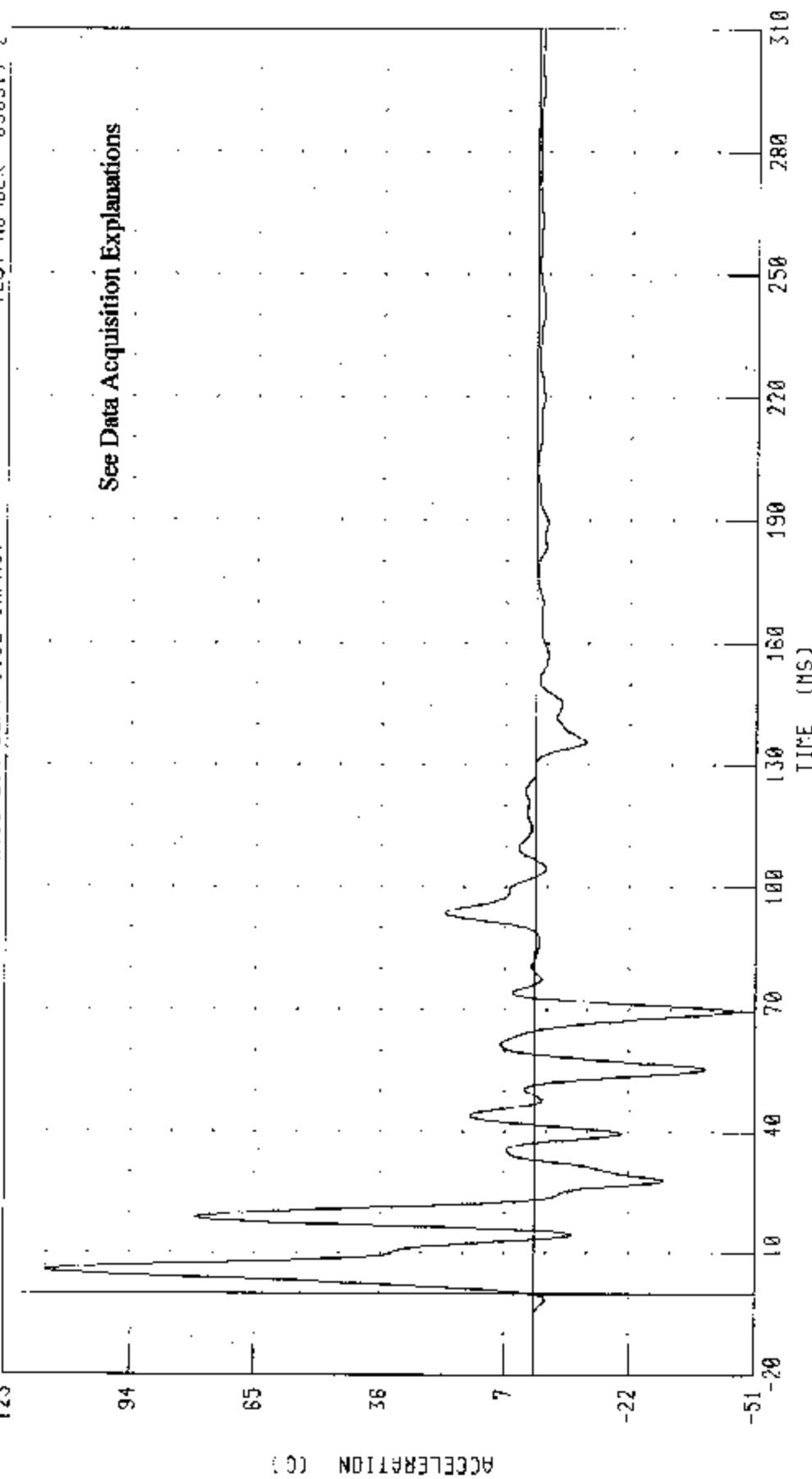
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT FRONT DOOR MID-REAR Y-AXIS ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

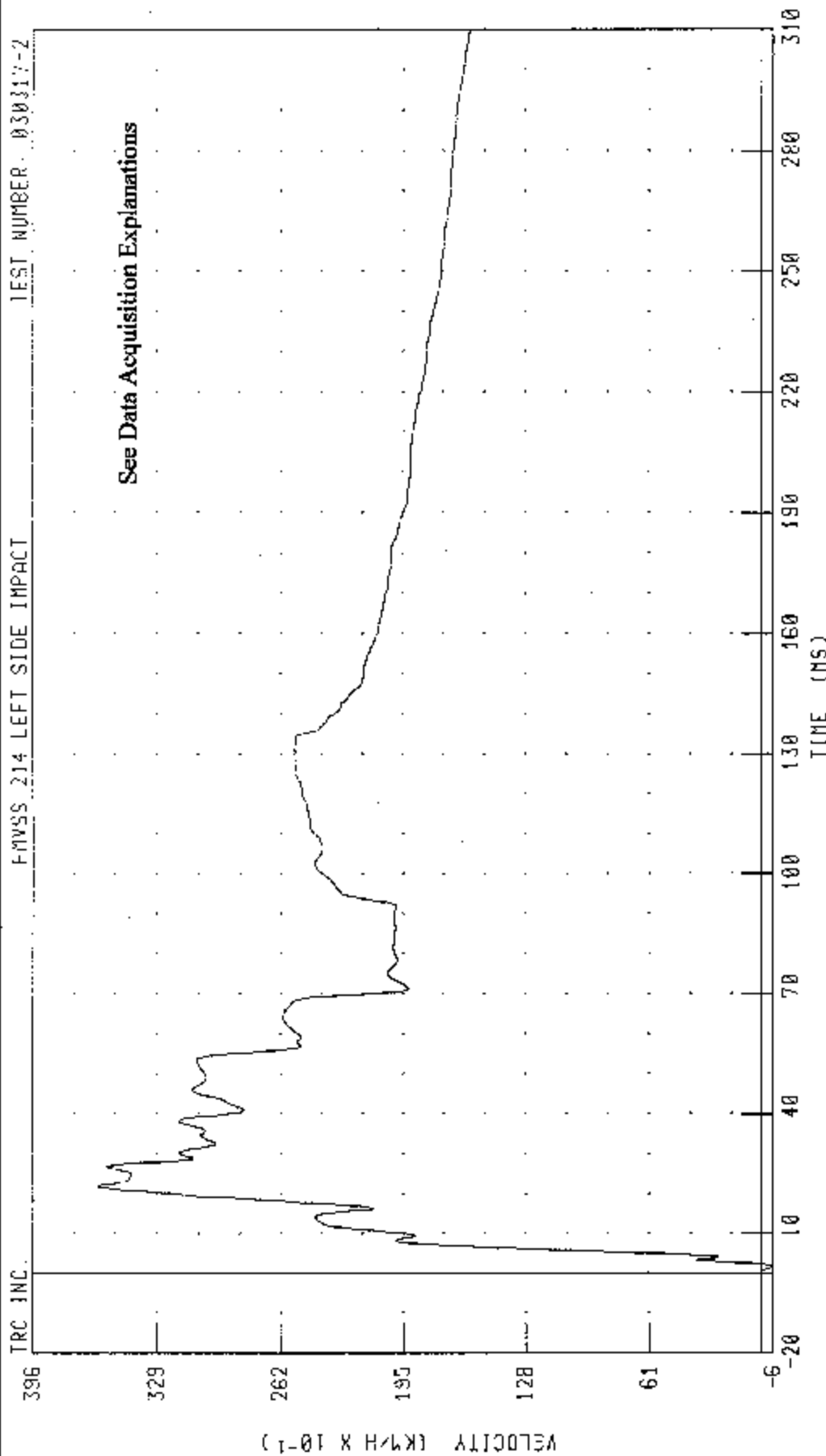
TEST NUMBER 030317-2



CHANNEL: LFMYC1 FILTER: CH. CLASS 60

PEAK DATA: 113.50 G @ 5.76 MS; -46.56 G @ 69.76 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 LEFT FRONT OCCUPANT REAR Y-AXIS VELOCITY



CHANNEL: LFMV1 FILTER CH CLASS 100

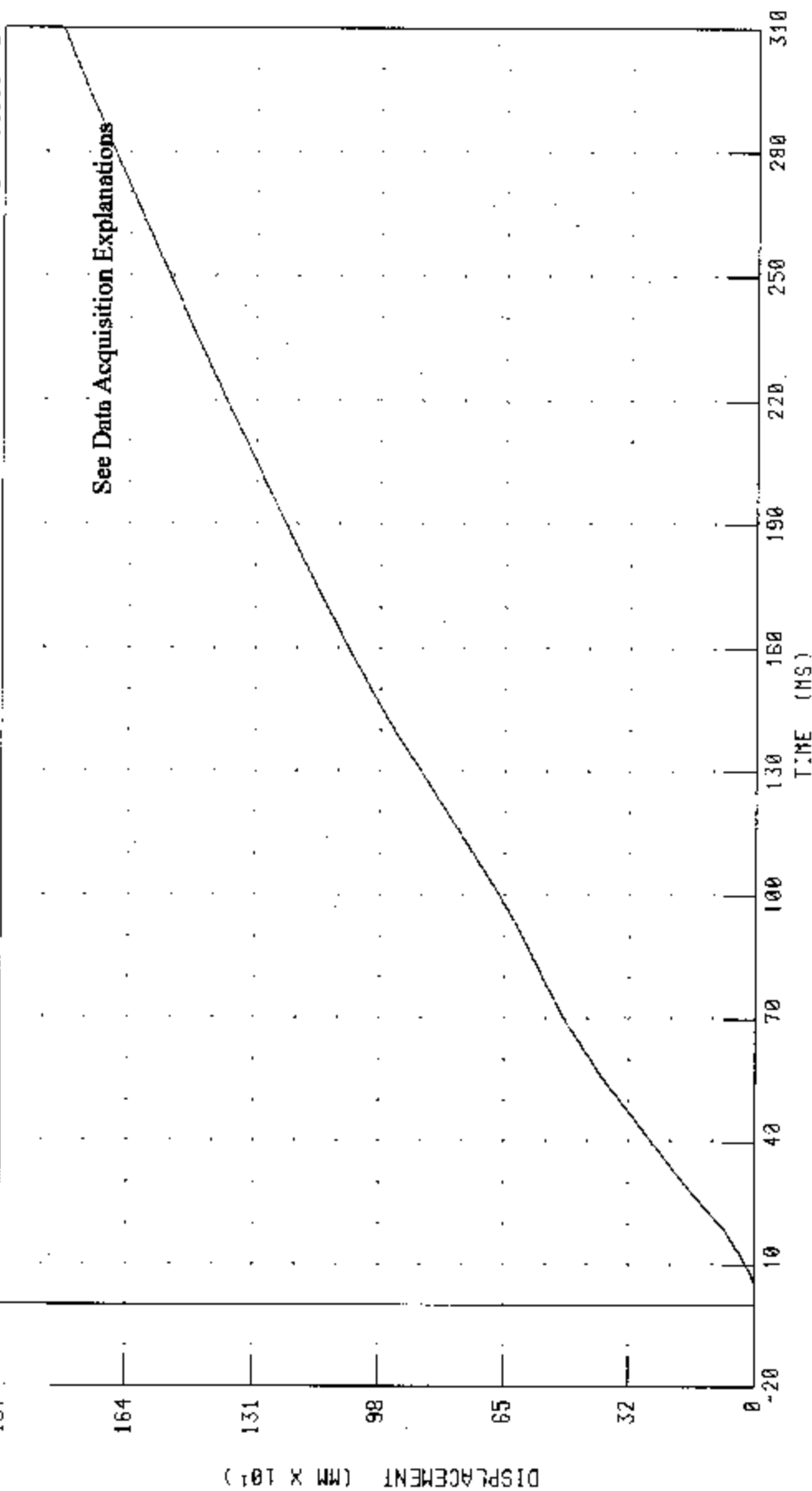
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT FRONT DOOR MID-REAR Y-AXIS DISPLACEMENT

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2

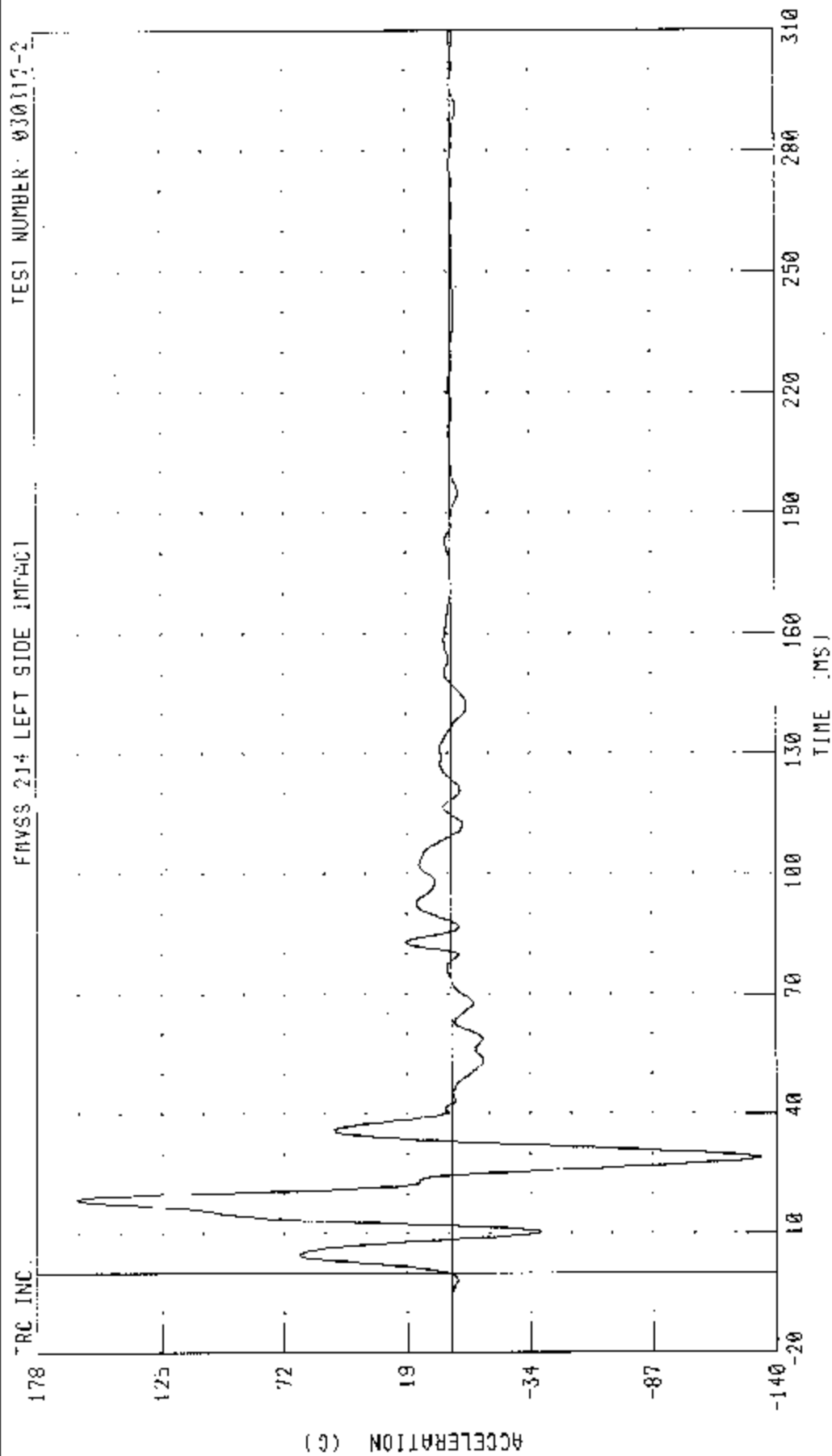


CHANNEL LFN01 FILTER: CH. CLASS 180

PEAK DATA 1020 92 MM @ 310 00 MS; -0.17 MM @ 2 24 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT FRONT LOWER UPPER CENTERLINE Y-AXIS ACCELERATION



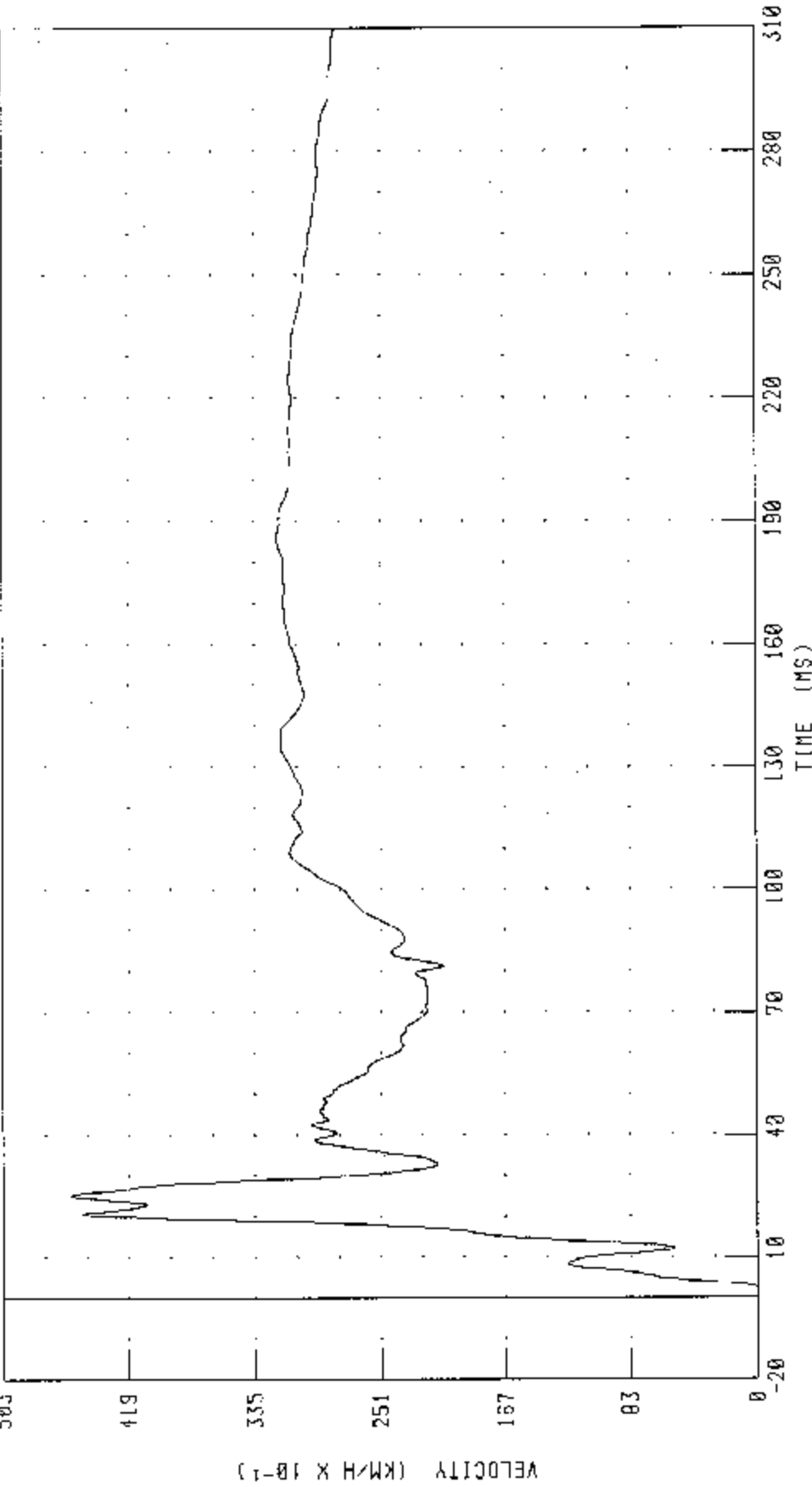
CHANNEL: LFUYG1 FILTER: CH CLASS 60

PEAK DATA 161.23 G @ 18.64 MS; -132.76 G @ 29.04 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT FRONT DOOR UPPER CENTERLINE Y-AXIS VELOCITY

TRC INC. FNVSS 214 LEFT SIDE IMPACT TEST NUMBER: 030317-2



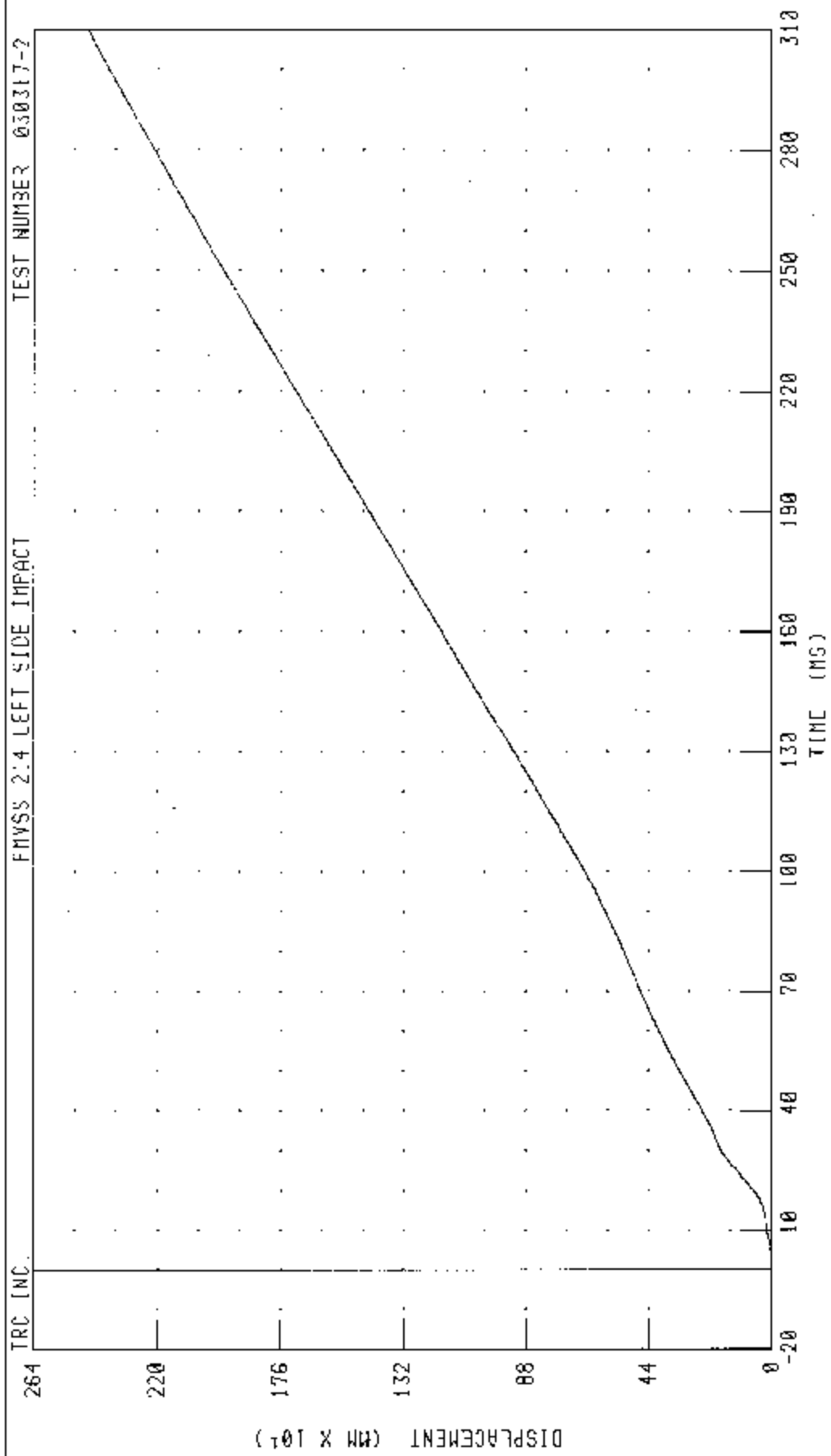
CHANNEL LFUYV1

FILTER: CH. CLASS 180

PEAK DATA: 45 88 KM/H @ 25 36 MS; -0 07 KM/H @ 2 00 MS



55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 LEFT FRONT DOOR UPPER CENTERLINE Y-AXIS DISPLACEMENT



CHANNEL: LFUYD1 FILTER: CH. CLASS 180 PEAK DATA 2449.51 MM @ 310.00 MS; -0.01 MM @ 240 MS

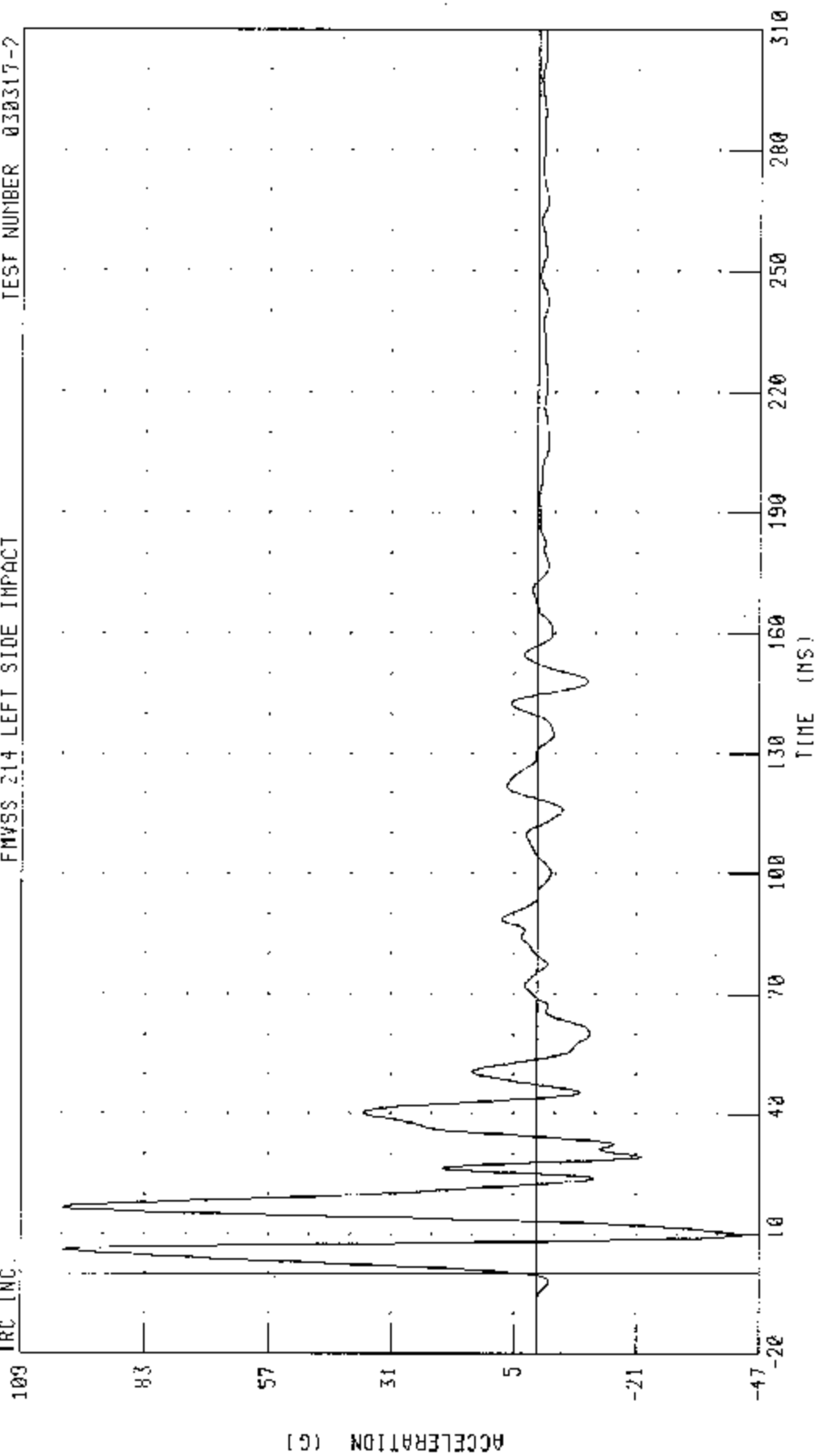
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) IN D LEFT SIDE OF 2003 MAZDA 6

LEFT REAR DOOR MID-REAR Y-AXIS ACCELERATION

TEST NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT

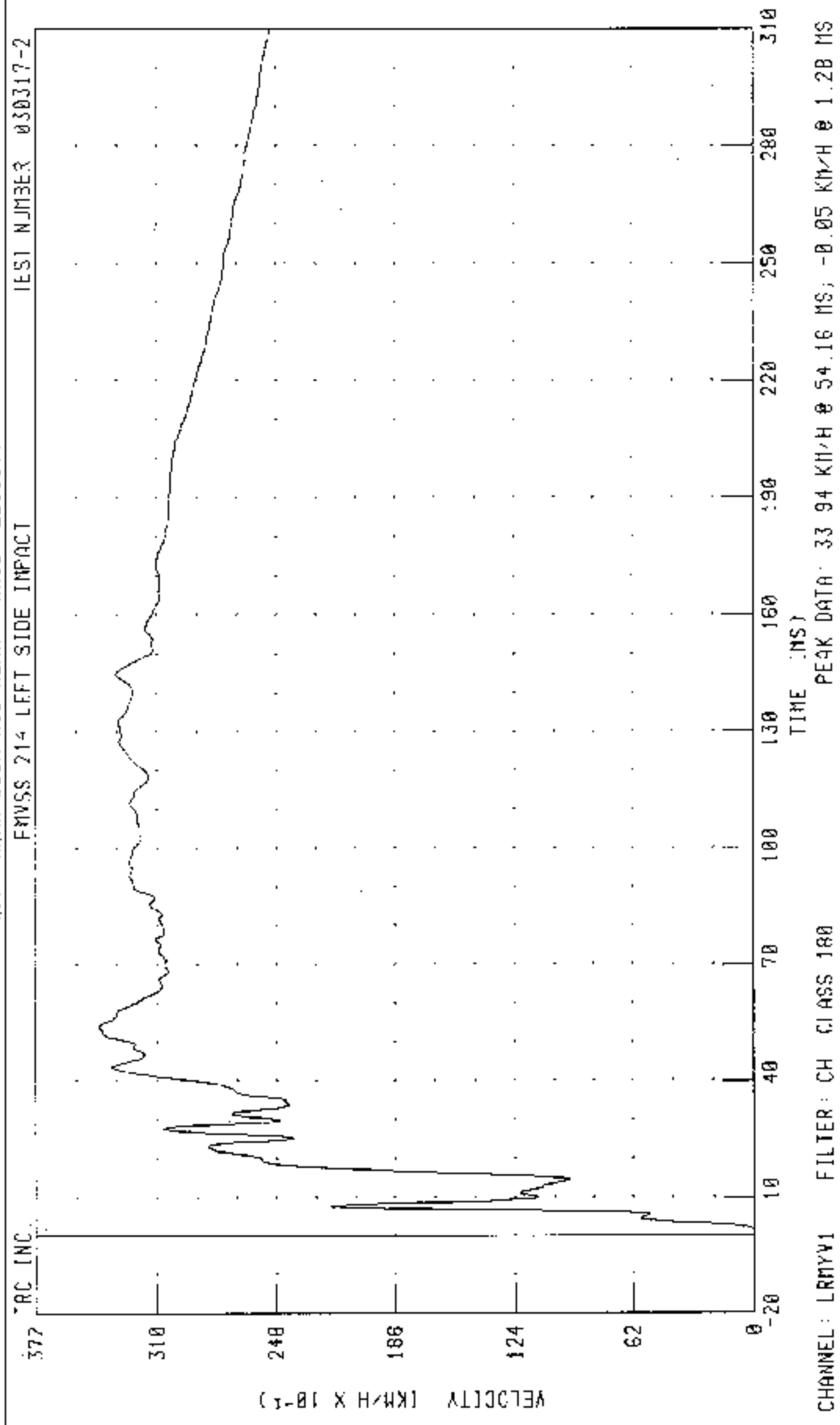
IRC INC.



CHANNEL LRMV01 FILTER: CH. CLASS 60

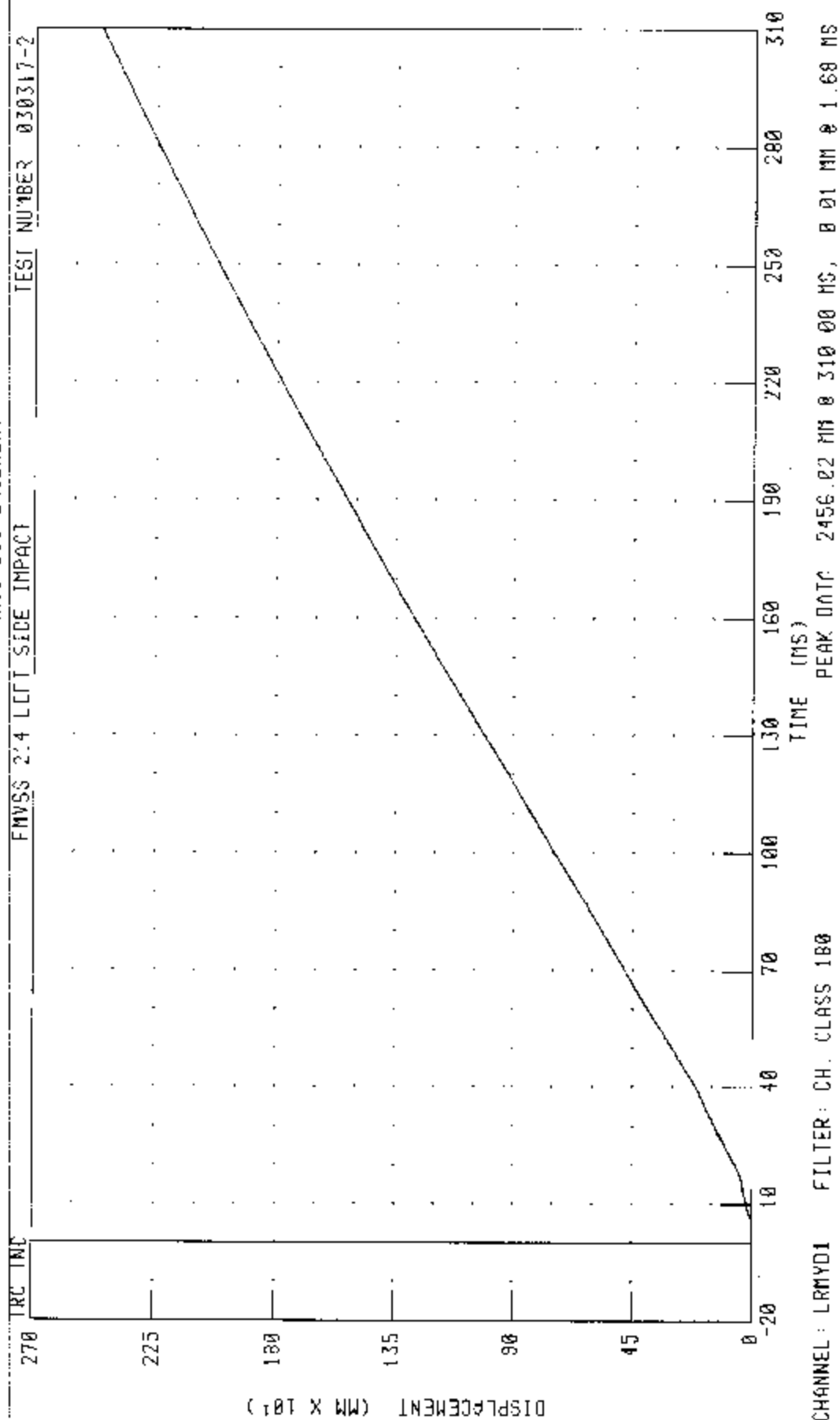
PEAK DATA: 100.04 G @ 16.80 MS; -43.48 G @ 9.84 MS

55/26 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 LEFT REAR DOOR MID REAR Y AXIS VELOCITY

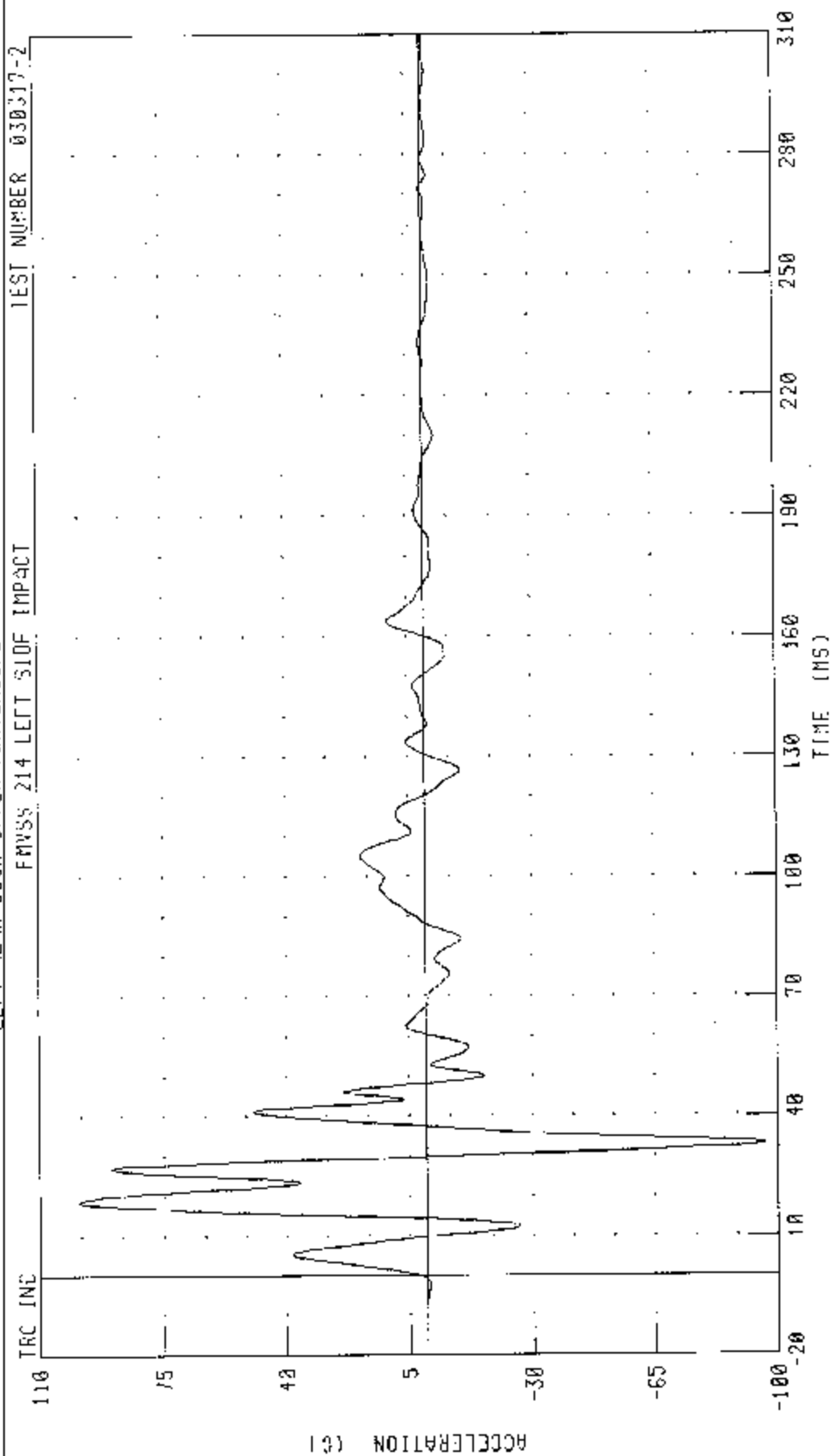


55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR DOOR MID-REAR Y-AXIS DISPLACEMENT



55/20 KPH 50 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INITI LEFT SIDE OF 20M3 MAZDA G  
LEFT REAR DOOR UPPER CENTERLINE Y-AXIS ACCELERATION



CHANNEL: LRUVC1 FILTER: CH. CLASS 60 PEAK DATA: 98 79 3 @ 10.72 MS; -96 48 G @ 33.04 MS

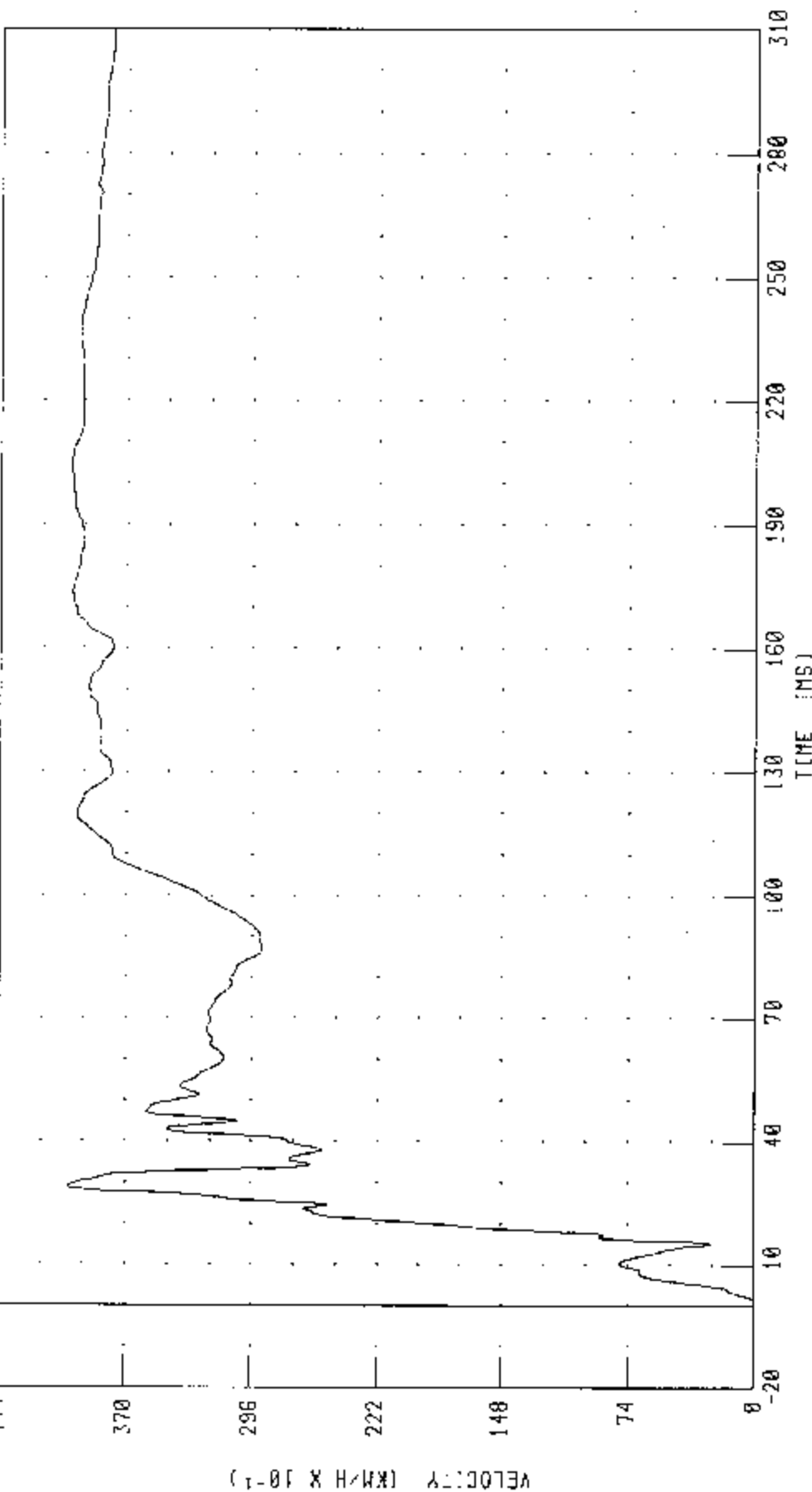
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR OCCUPANT UPPER CENTERLINE Y-AXIS VELOCITY

TRC INC

FMVSS 214 LEFT SIDE IMPACT

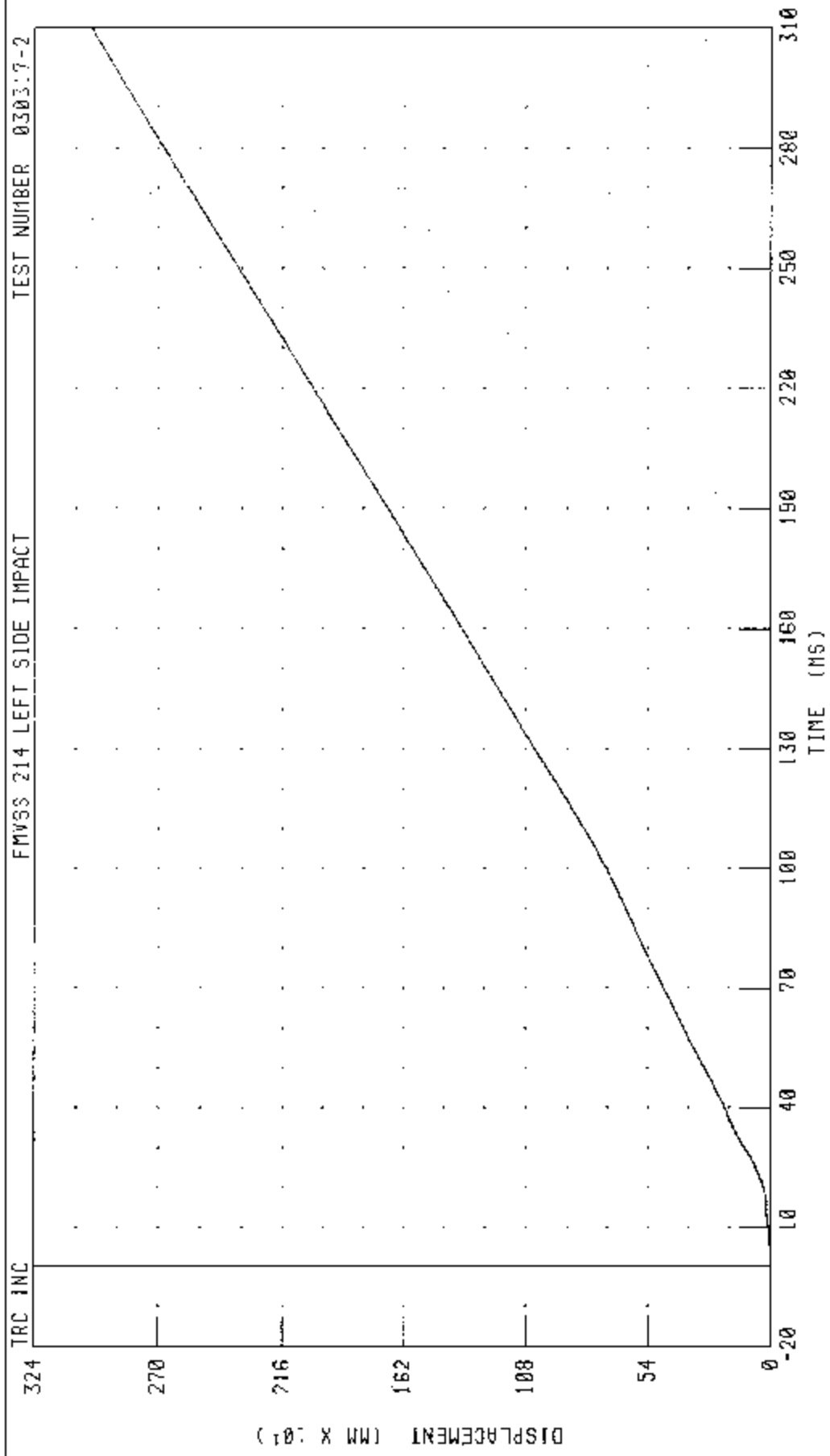
TEST NUMBER: 030317-2



CHANNEL: LRUYY1 FILTER: CH. CLASS 100

PEAK DATA: 40.37 KM/H @ 29.04 MS, -0.02 KM/H @ 0.80 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING AFFORDABLE BARRIER) INTO LEFT SIDE OF 200.5 M42DA 6  
 LEFT REAR DOOR UPPER CENTERLINE Y-AXIS DISPLACEMENT

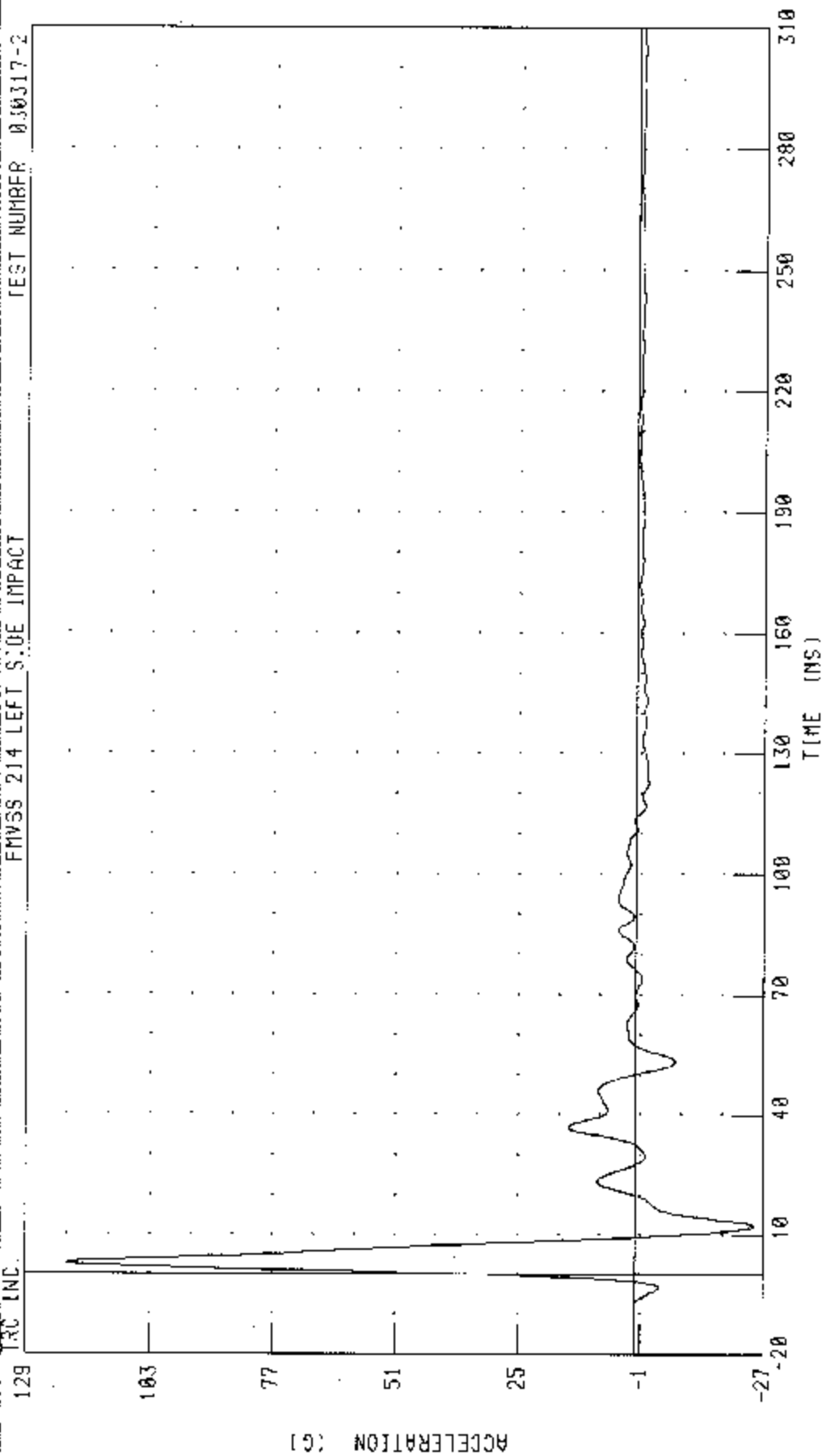


CHANNEL LRU01 FILTER: CH CLASS 180 PEAK DATA 2993.70 MM @ 310.00 MS; 0 00 MY @ 1 20 MS

55/28 KP4 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT LOWER A-POST Y-AXIS ACCELERATION

TRC INC. FMVSS 214 LEFT SIDE IMPACT TEST NUMBER 030317-2

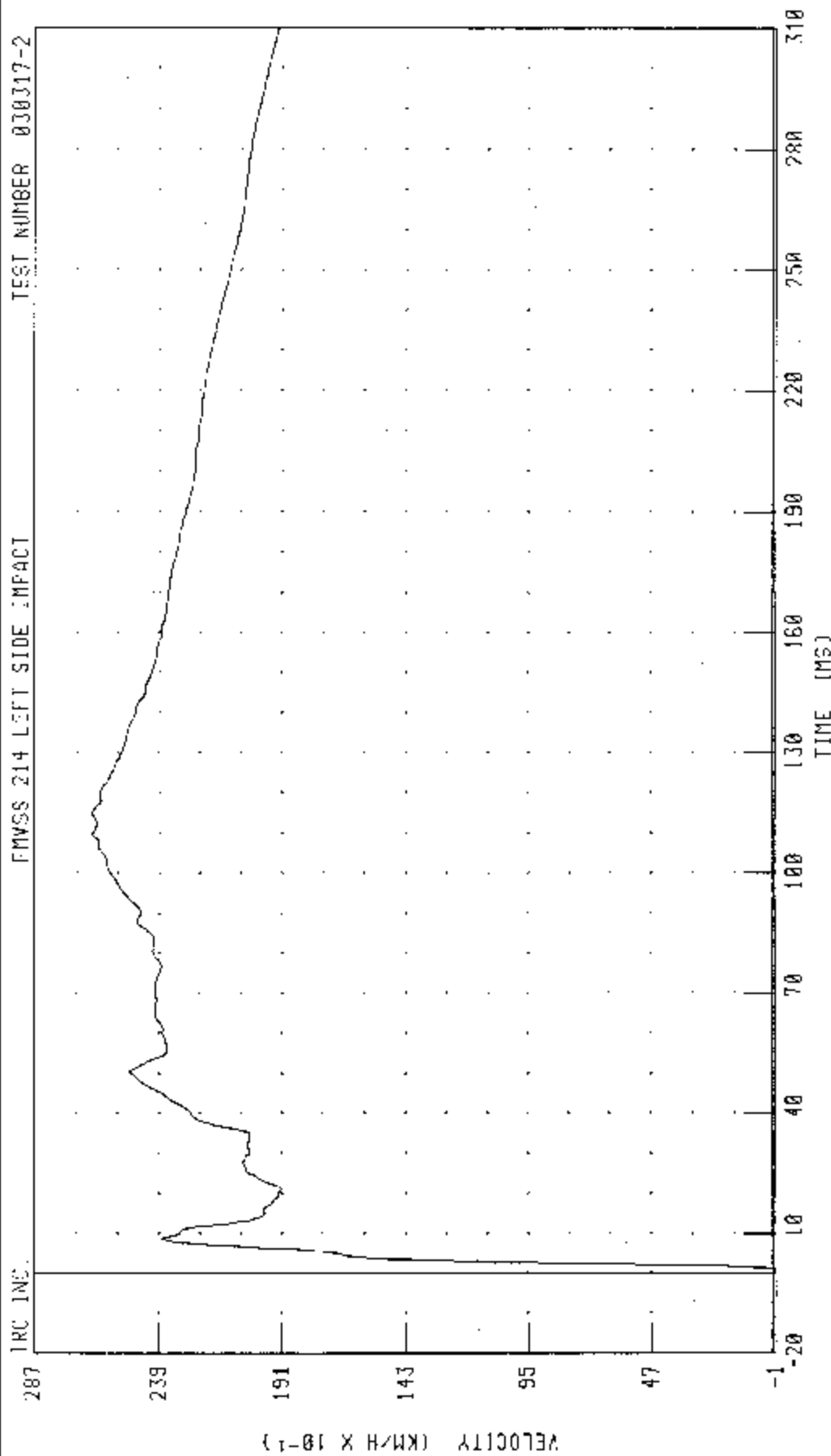


CHANNEL L1AYC1 FILTER: CH. CLASS 60

PEAK DATA: 120.41 G @ 2.80 MS, -24.88 G @ 12.24 MS



55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
LEFT LOWER A-POST Y-AXIS VELOCITY



CHANNEL: LLAYV1 FILTER CH. CLASS 180 PEAK DATA 26.47 KM/H @ 109.84 MS -0.13 KM/H @ 0.64 MS

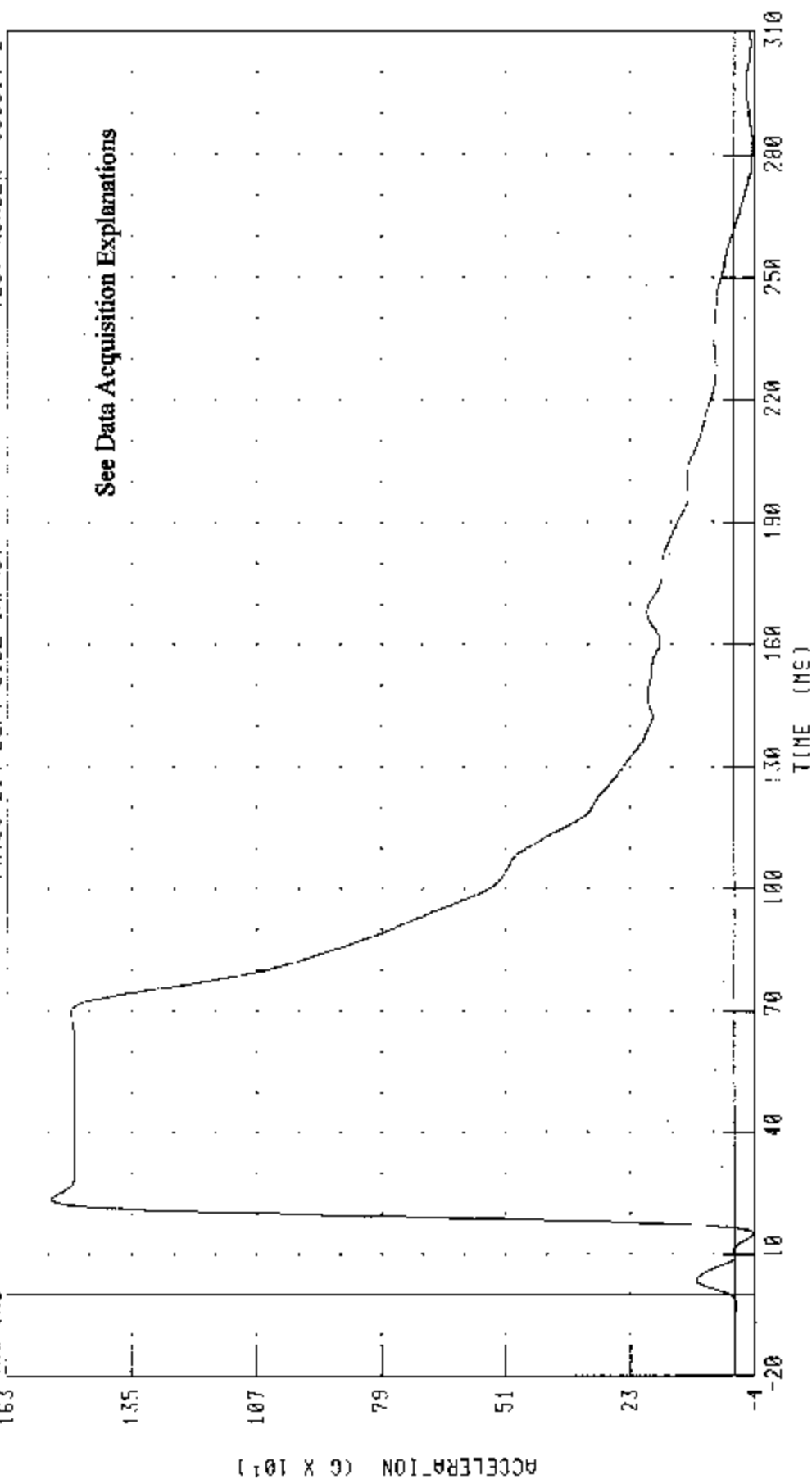
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT MIDDLE A-POST Y-AXIS ACCELERATION

TRC INC

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2



CHANNEL LMAYC1 FILTER CH. CLASS 60

PEAK DATA: 1533.44 G @ 23.76 MS, -42.64 G @ 15.12 MS

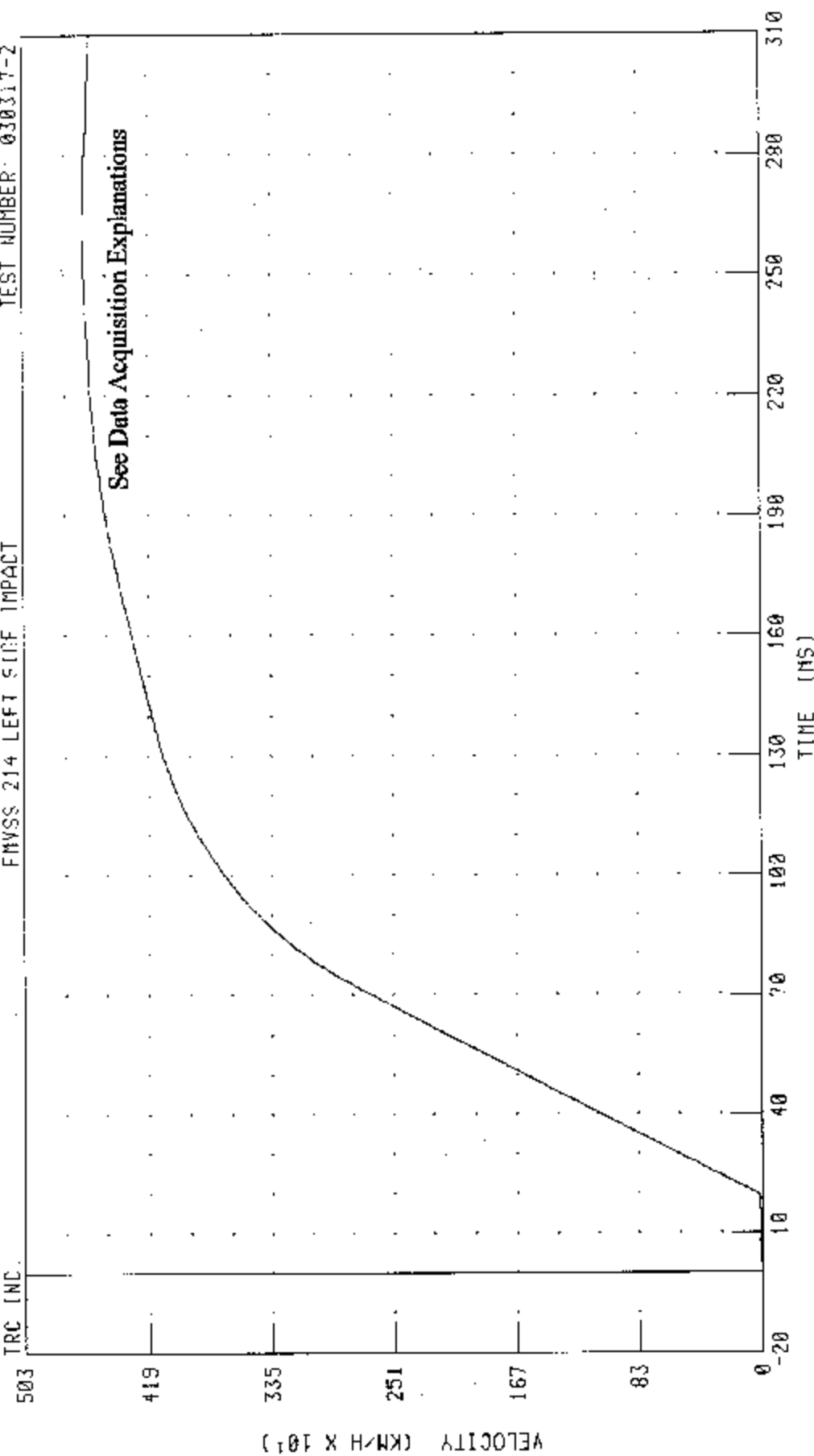
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT MIDDLE A-POST Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2

TRC INC.



CHANNEL: LMAYV1 FILTER: CH. CLASS 180

PEAK DATA: 4633 03 KM/H @ 262.48 MS. -0.13 KM/H @ 1.04 MS

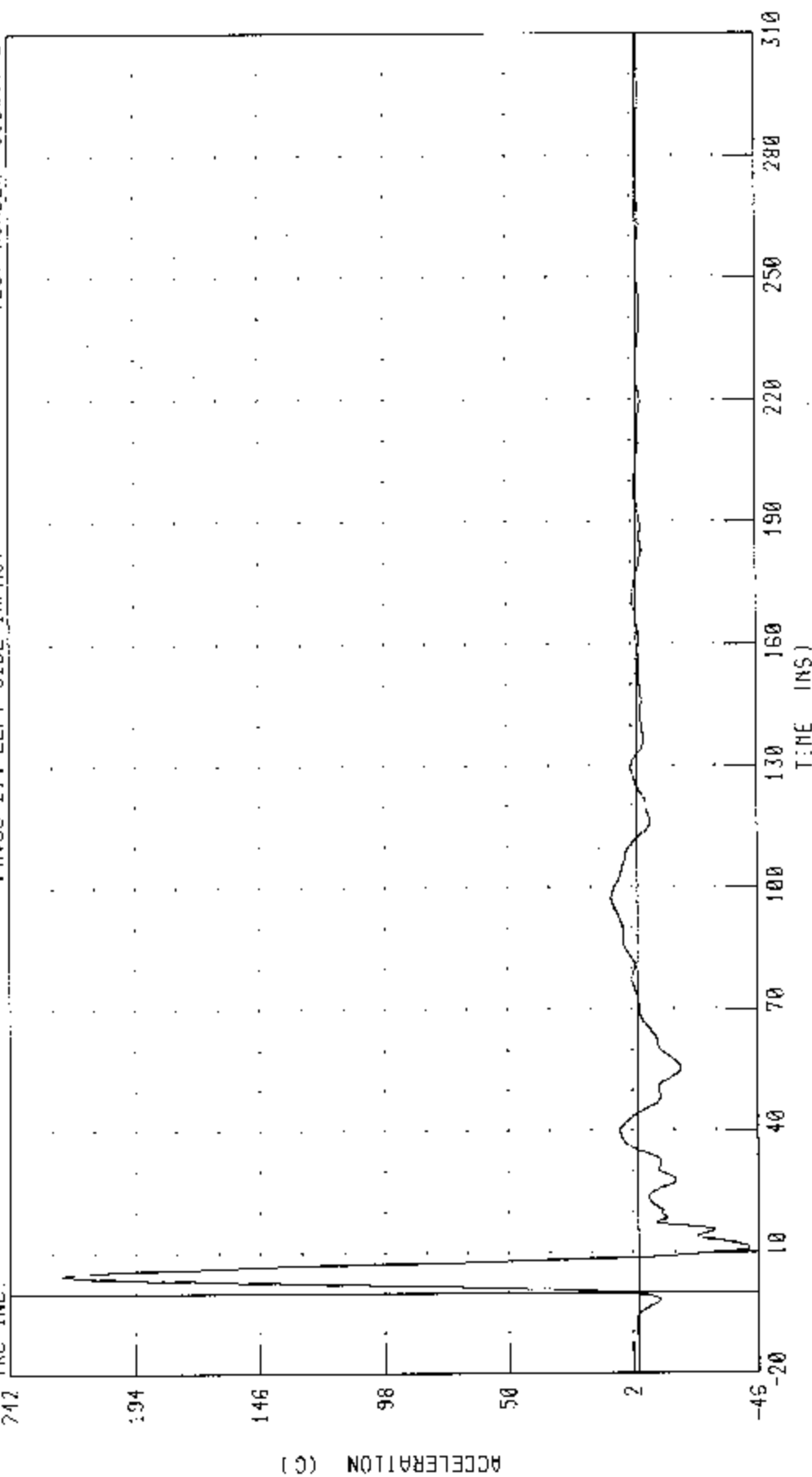
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING OFFURMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT LOWER B-POST Y-AXIS ACCELERATION

TEST NUMBER: 030317-2

FMVSS 214 LEFT SIDE IMPACT

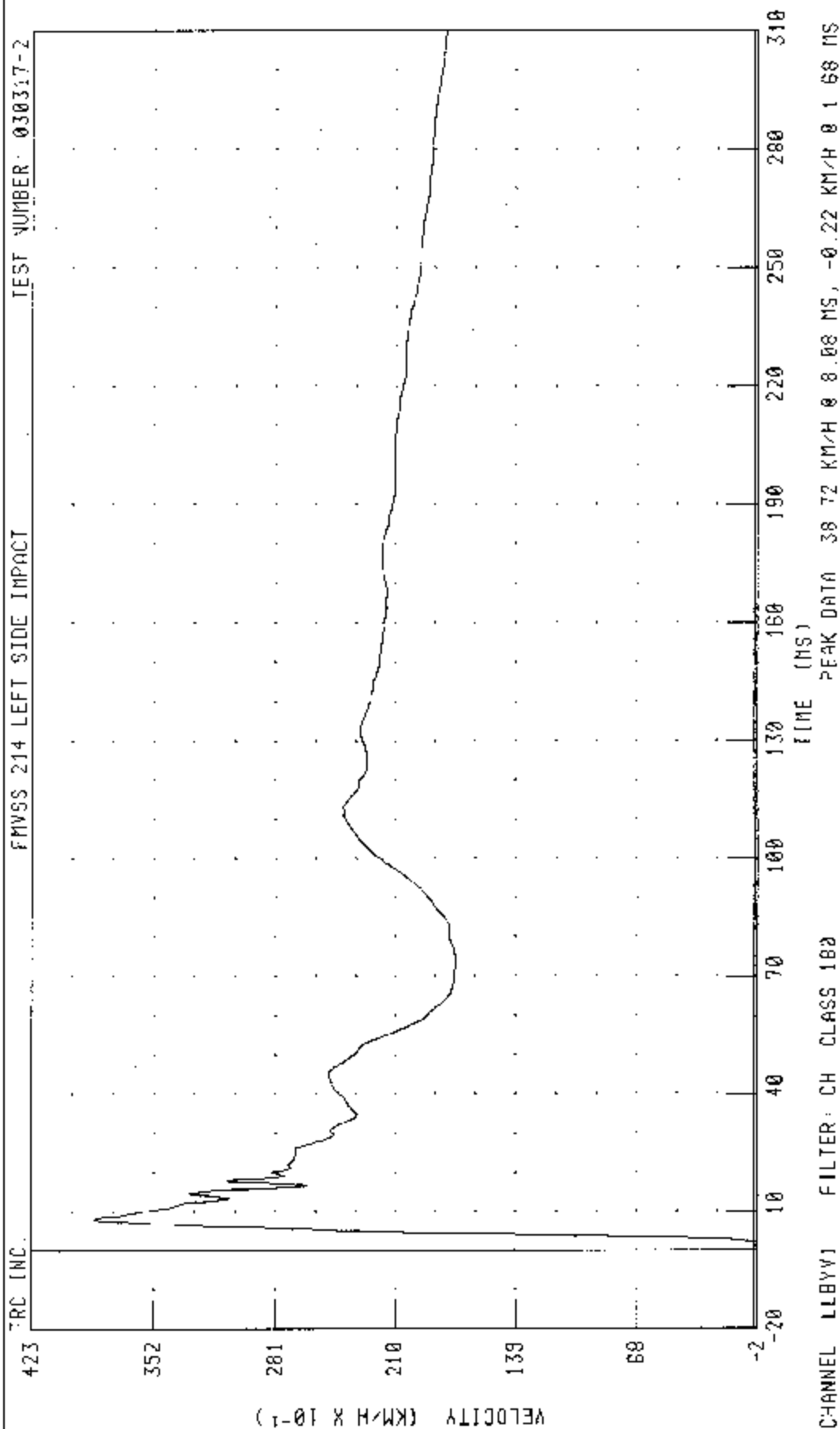
TRC INC.



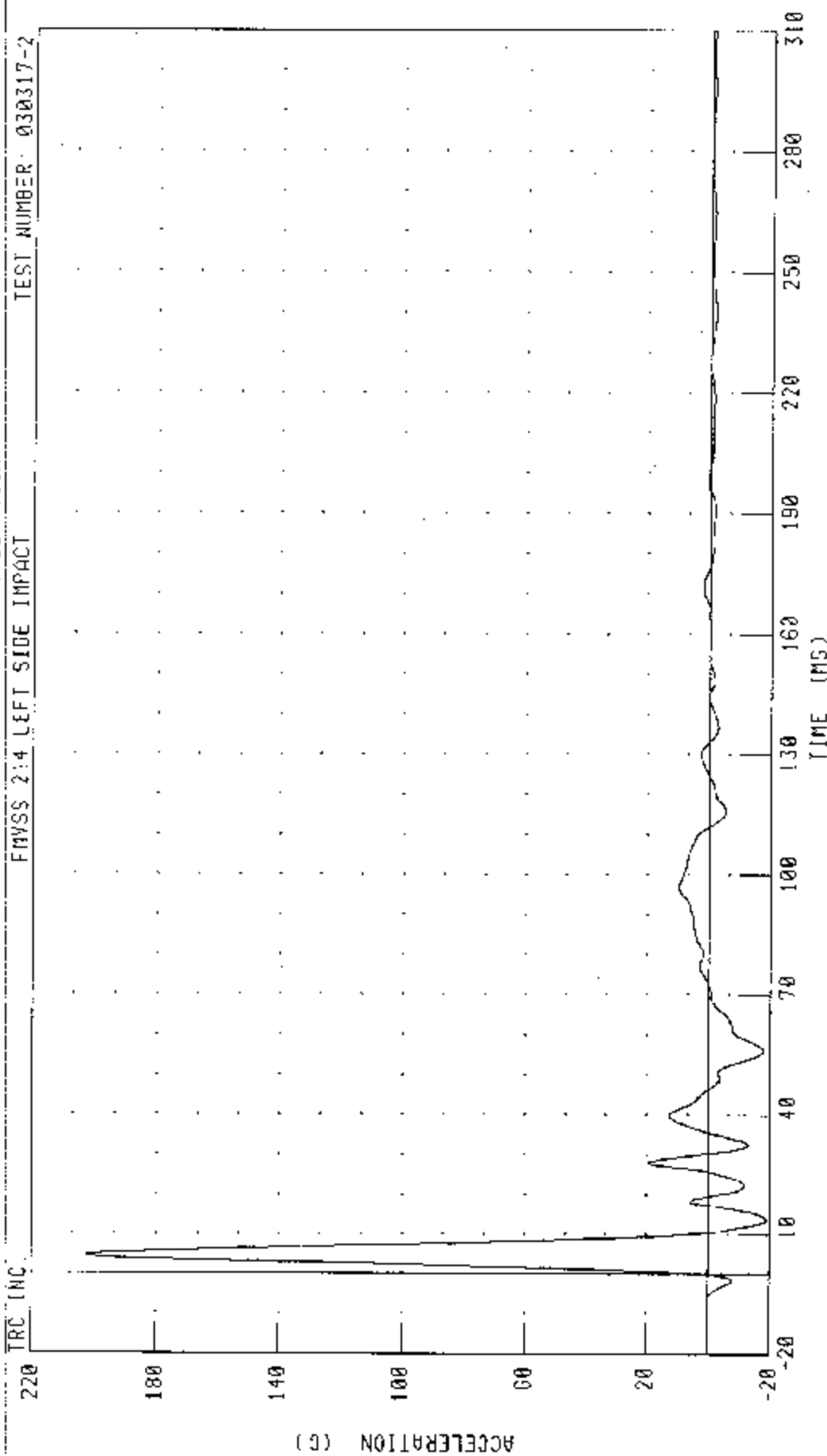
PEAK DATA 222 55 G @ 4.56 MS, 42.57 G @ 11 12 MS

CHANNEL: LBYG1 FILTER: CH. CLASS 60

55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
LEFT LOWER B-POST Y-AXIS VELOCITY



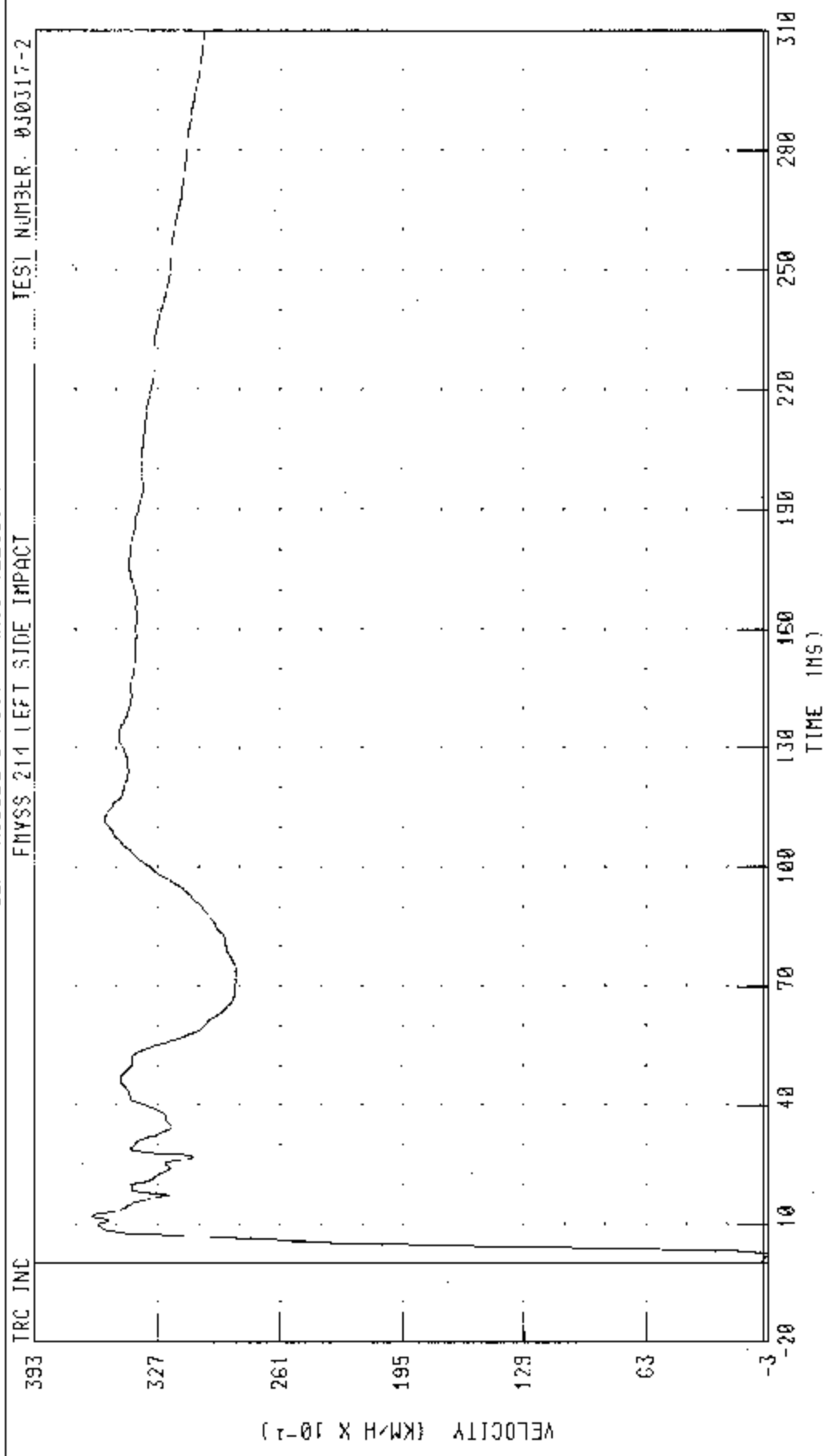
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
LEFT MODULE B POST Y-AXIS ACCELERATION



CHANNEL: LMBC1 FILTER: CH CLASS: 00

PEAK DATA 202.48 G @ 4.56 MS; -18.74 G @ 13.60 MS

55'28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 MAZDA 5  
 LEFT MIDDLE B-FUSI Y-AXIS VELOCITY)



TRC INC

FNYS 214 LEFT SIDE IMPACT

IESI NUMBER: 030317-2

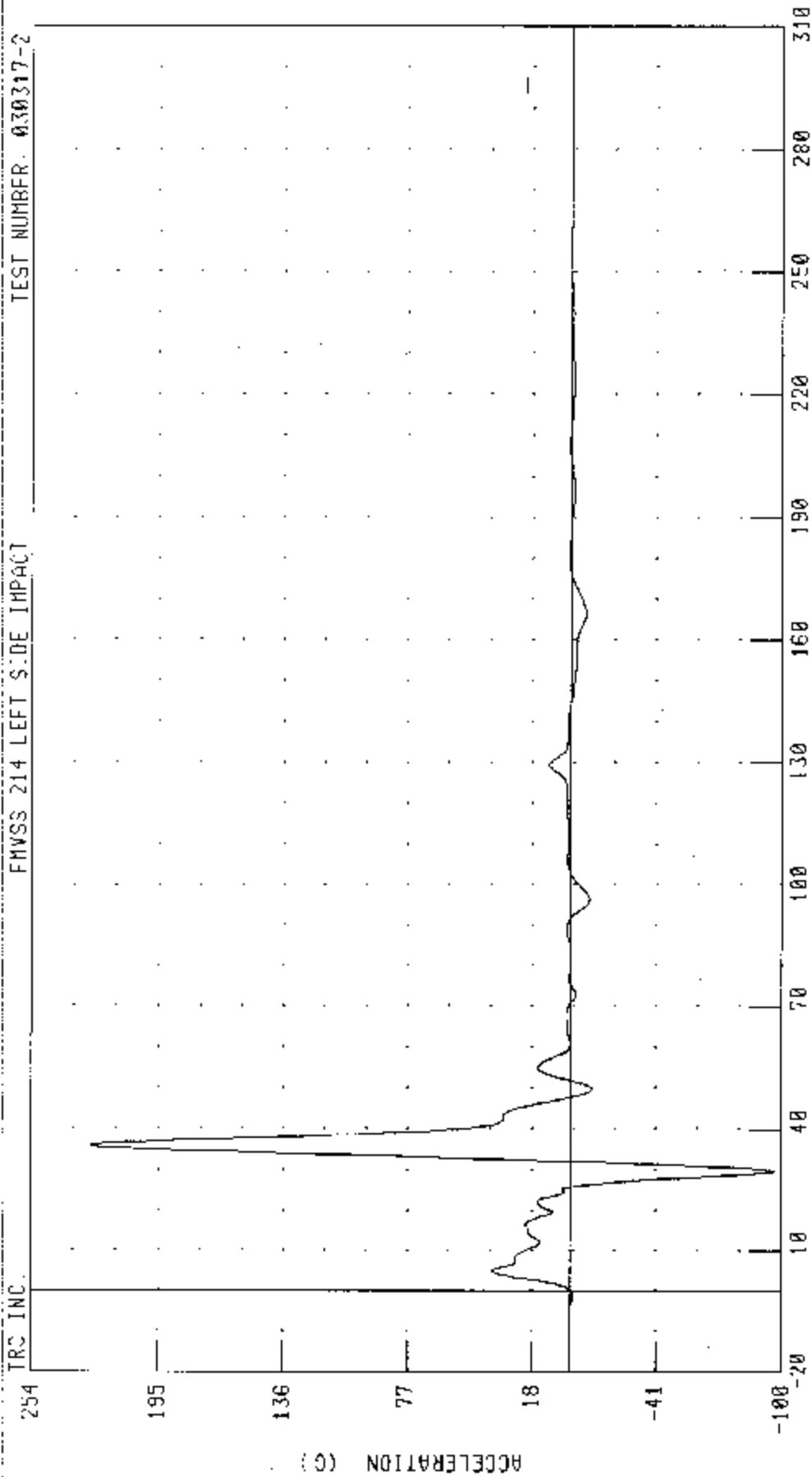
CHANNEL: LMBYV1 FILTER: CH. CLASS 100  
 PEAK DATA 36 23 KM/H @ 12.24 MS; -0.31 KM/H @ 2.00 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT FRONT SEAT TRACK Y-AXIS ACCELERATION

TEST NUMBER: 030317-2

FMVSS 214 LEFT SIDE IMPACT



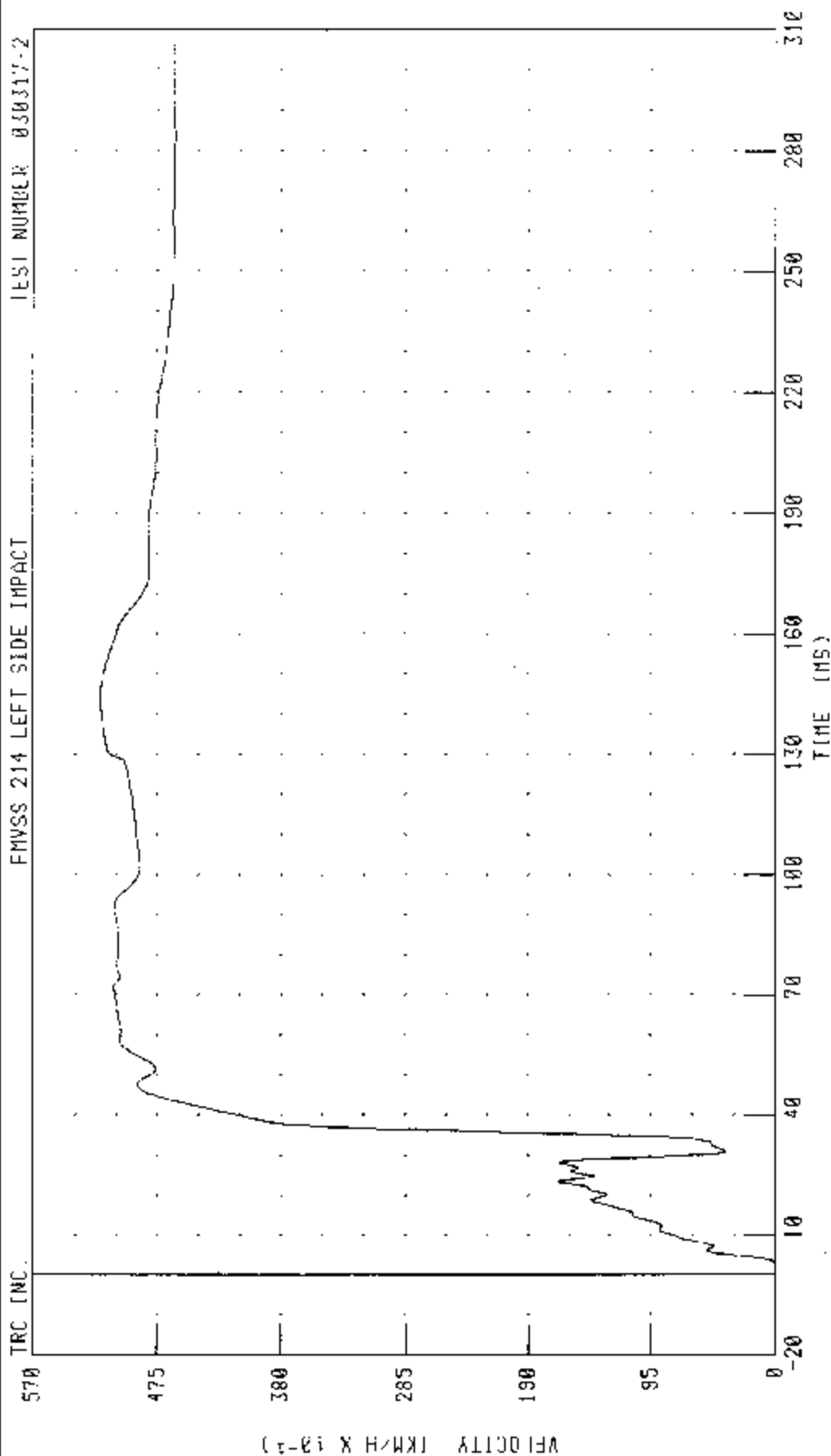
TIME (MS)

CHANNEL: LFTY01 FILTER: CH. CLASS 60

PEAK DATA: 226.08 G @ 36.08 MS; -96.51 G @ 29.68 MS



55/28 KPH 90 DEGREE STDF IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
LEFT FRONT SEAT TRACK Y-AXIS VELOCITY



CHANNEL: LF1YV1 FILTER: CH. CLASS 180 PEAK DATA: 51.89 KM/H @ 144.00 MS; -0.03 KM/H @ 2.48 MS

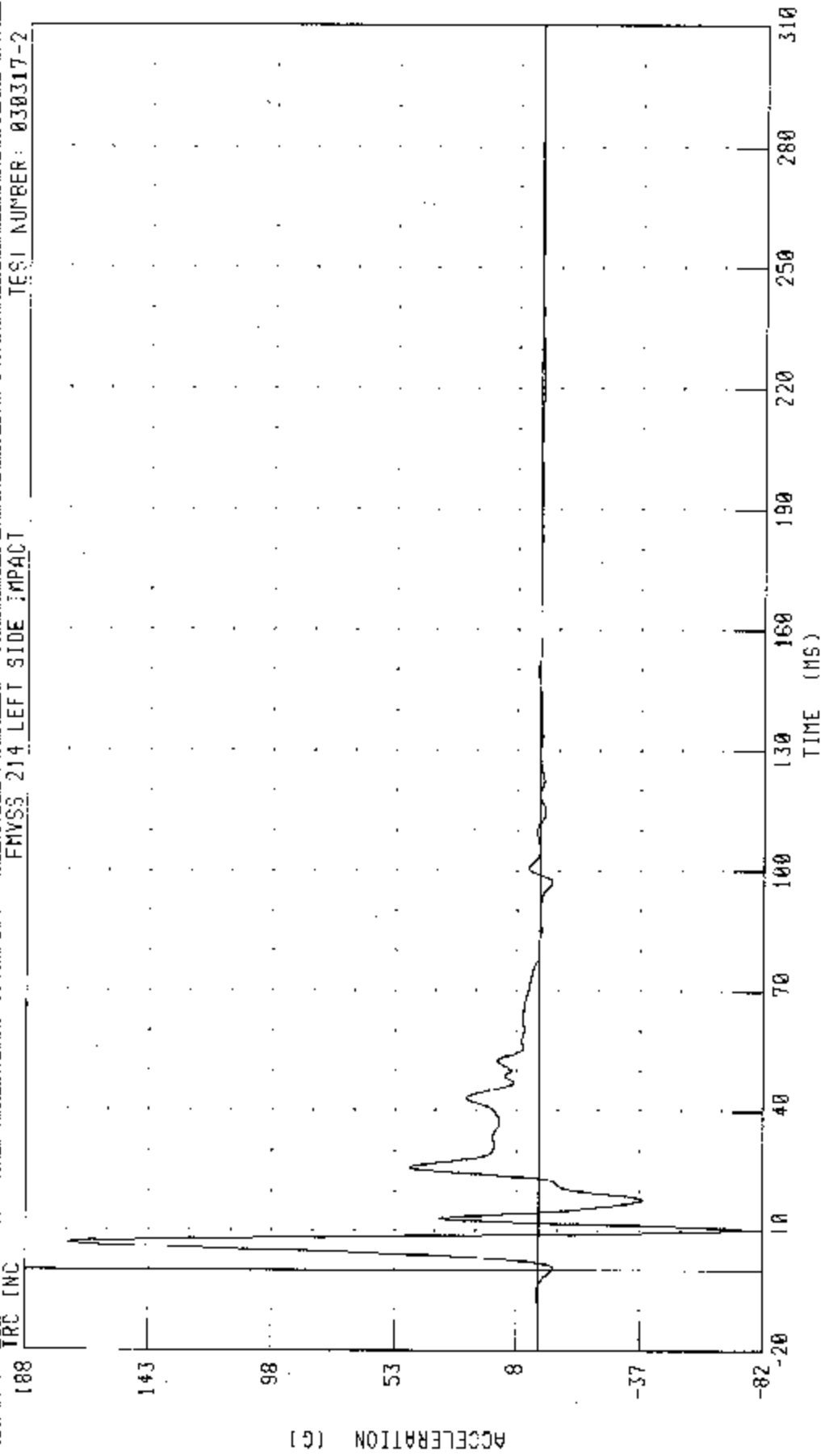
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR SEAT TRACK Y-AXIS ACCELERATION

TRC INC

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2



CHANNEL LRTYC1 FILTER: CH. CLASS 60

PEAK DATA: 172.61 G @ 6.88 MS; -74.75 G @ 10.24 MS

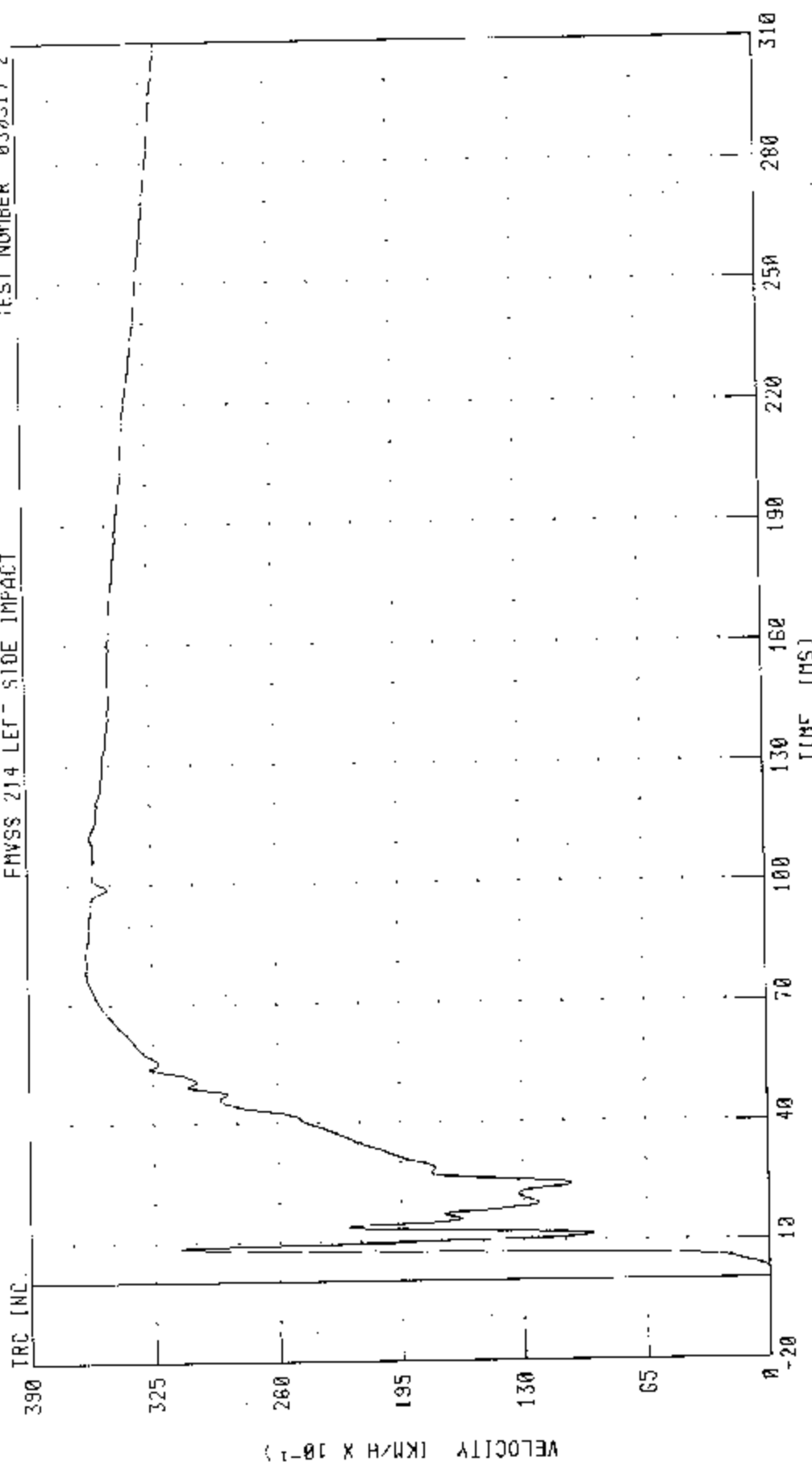
55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR SEAT TRACK Y-AXIS VELOCITY

TEST NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT

TRC INC.



TIME (MS)

PEAK DATA: 35.97 KM/H @ 82.16 MS, -0.01 KM/H @ 1.84 MS

CHANNEL LRTYV1 FILTER CH. CLASS 180

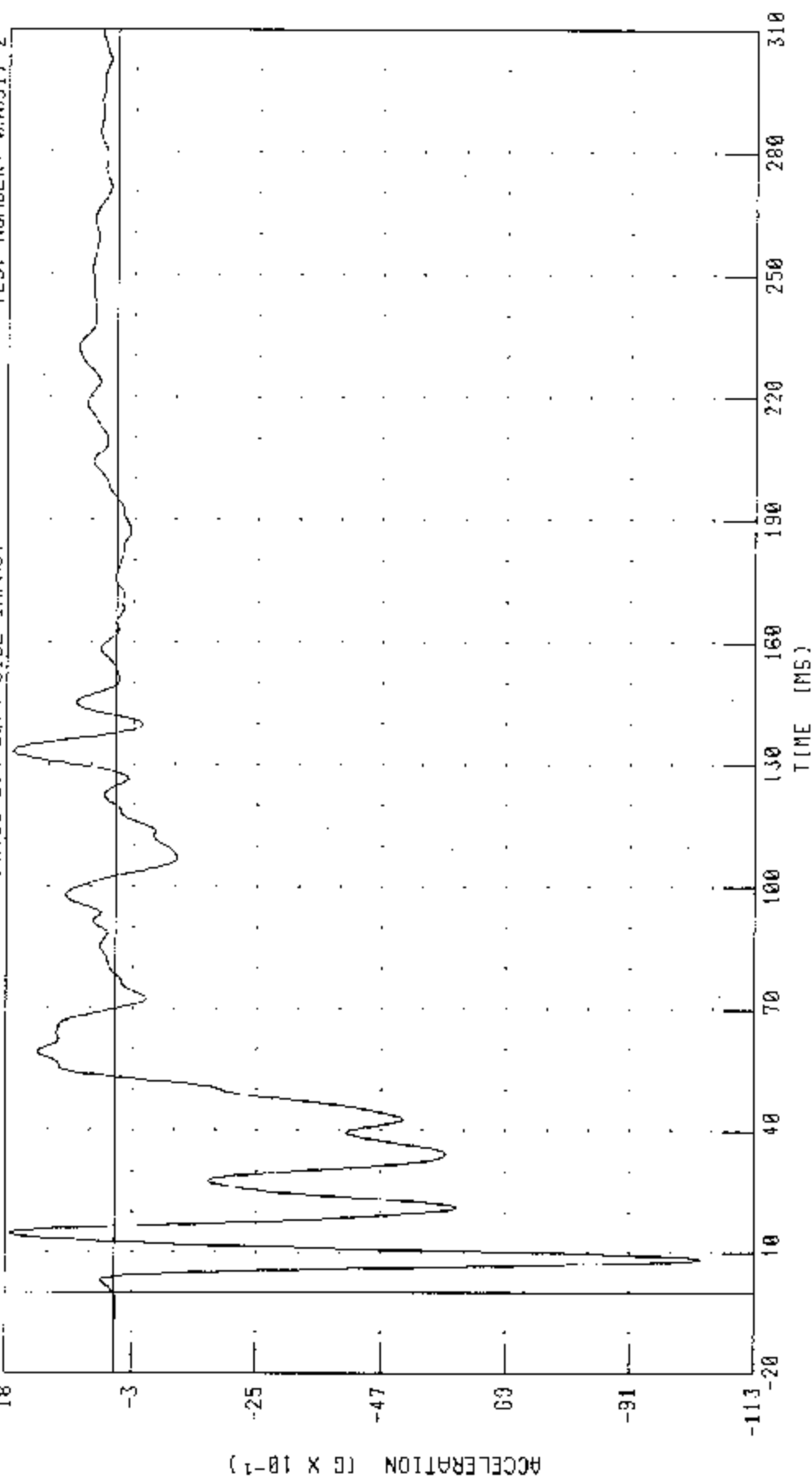
55/23 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

VEHICLE CENTER OF GRAVITY X-AXIS ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

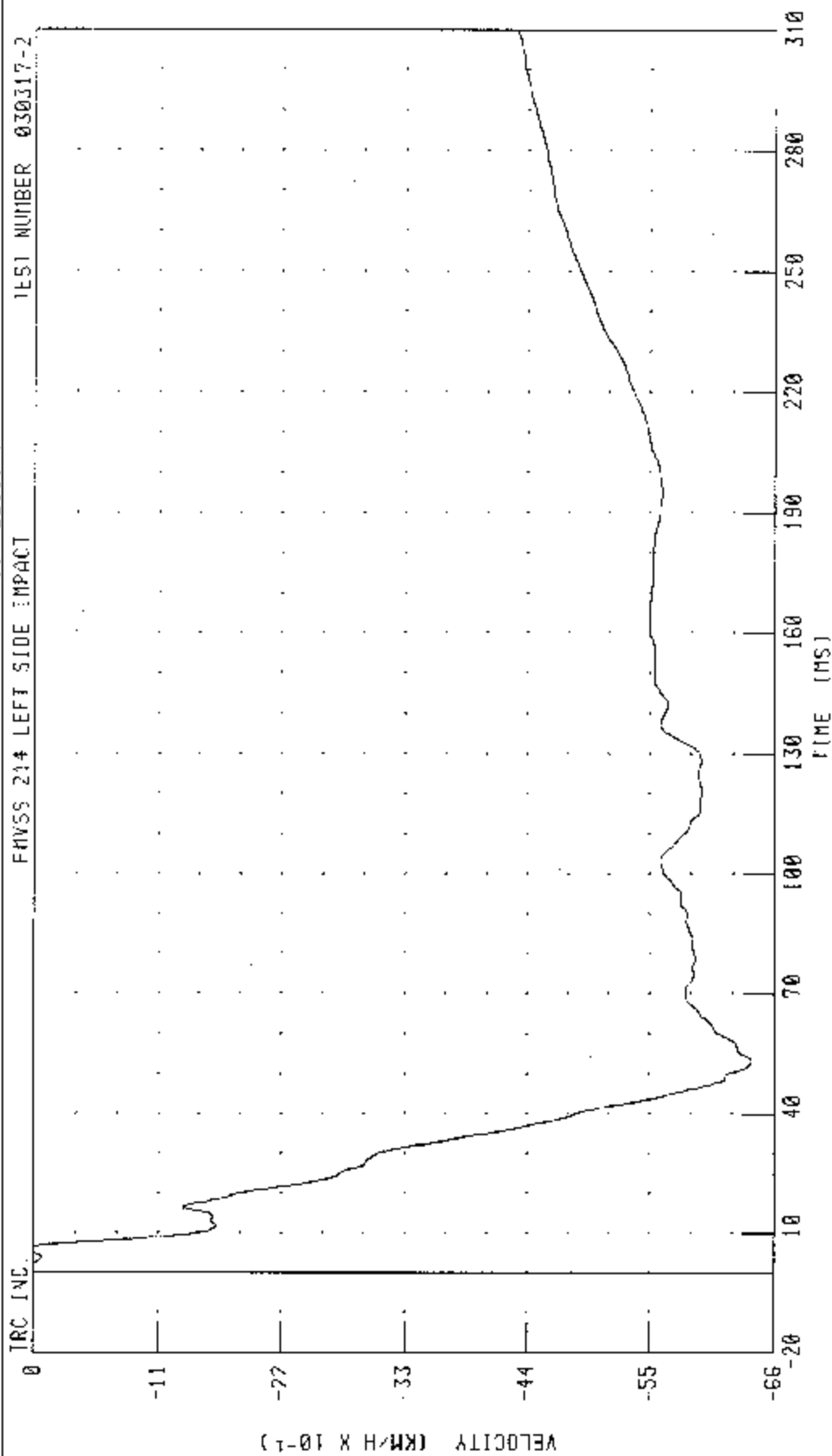
TEST NUMBER: 030317-2



CHANNEL: VCCX01 FILTER: CH. CLASS 60

PEAK DATA: 1 82 G @ 14.80 MS, -10.37 G @ 8.40 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
VEHICLE CENTER OF GRAVITY X-AXIS VELOCITY



TEST NUMBER 030317-2

FAVSS 214 LEFT SIDE IMPACT

CHANNEL: VCGXV1 FILTER: CH CLASS 180

PEAK DATA: 0.09 KM/H @ 5.92 MS; -6.40 KM/H @ 53.44 MS

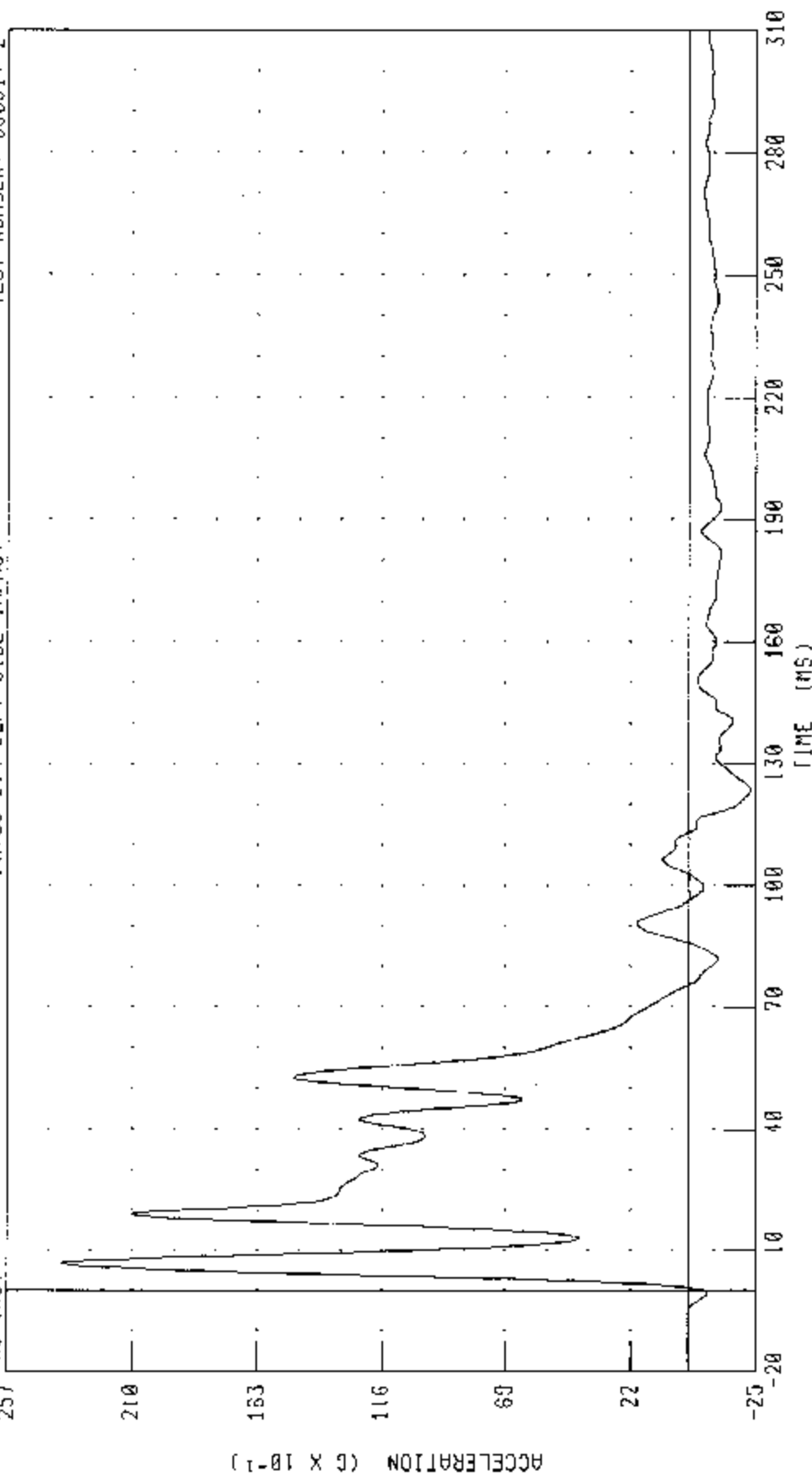
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

VEHICLE CENTER OF GRAVITY V-AXIS ACCELERATION

TRC INC

FMVSS 214 LEFT SIDE IMPACT

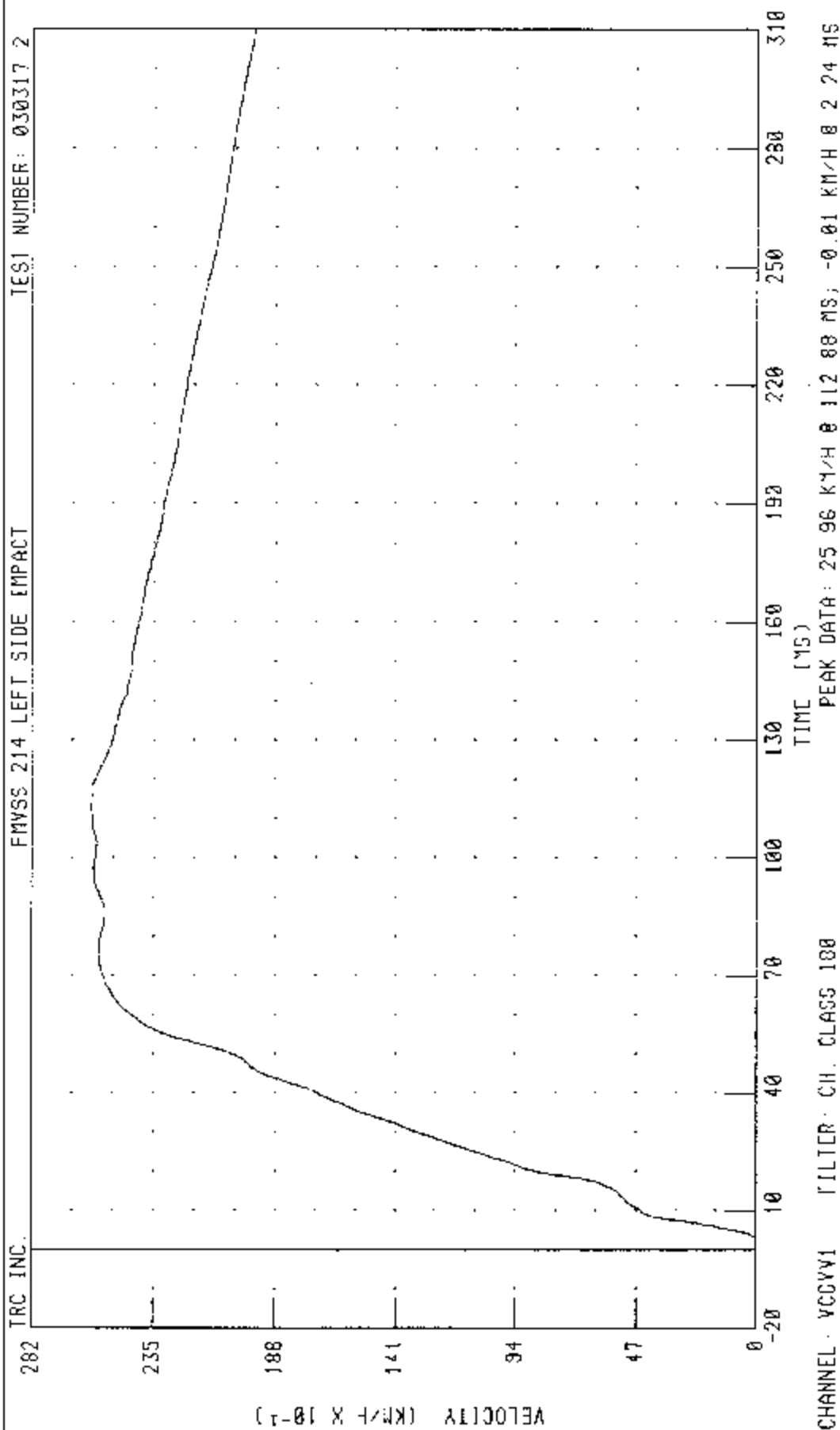
TEST NUMBER: 030317-2



CHANNEL: VCCY61 FILTER: CII, CLASS 60

PEAK DATA: 23.68 G @ 6.88 MS; -2.29 G @ 123.34 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
VEHICLE CENTER OF GRAVITY Y-AXIS VELOCITY



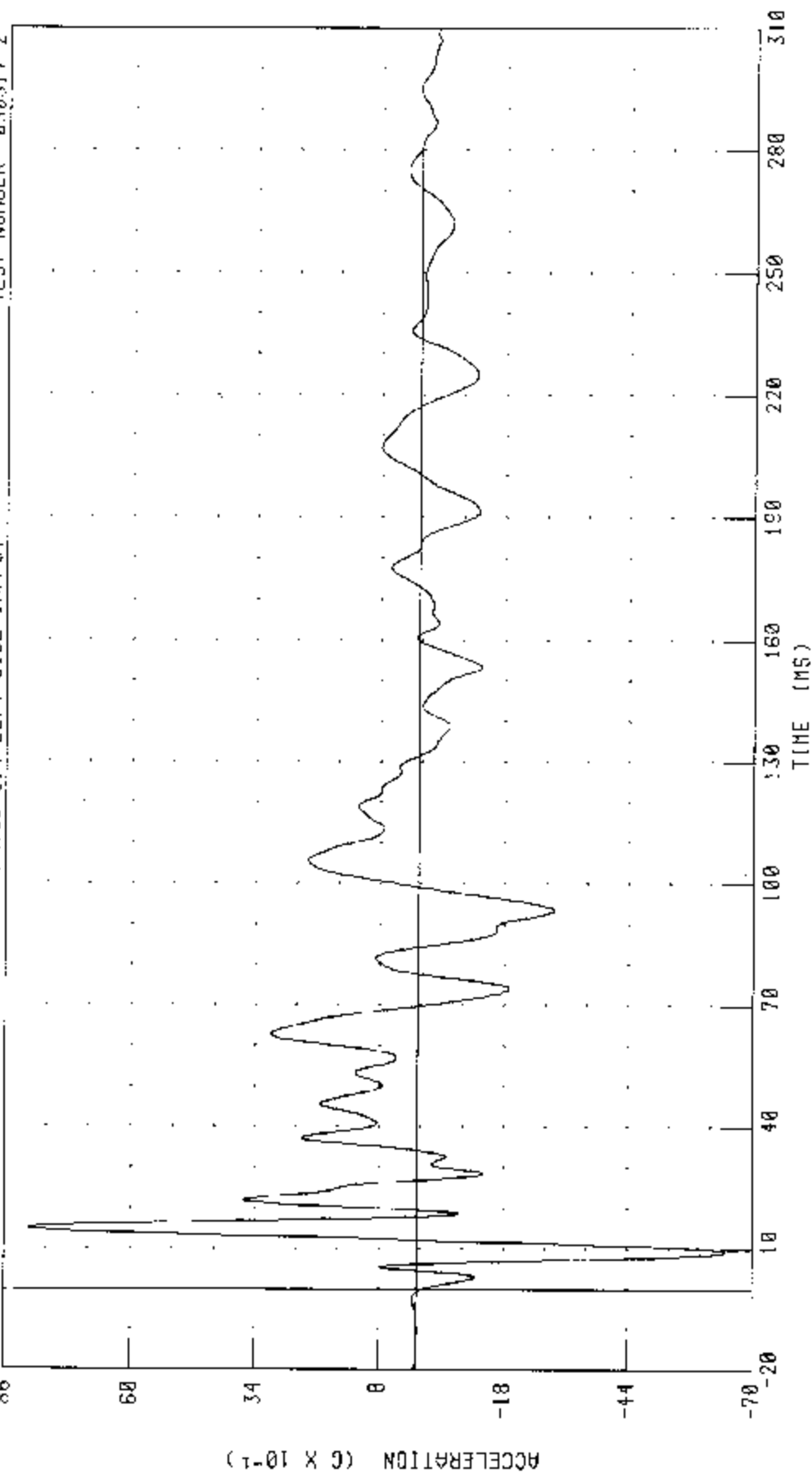
55/28 KPH 90 DEGREE S10F IMPACT (MOVING DEFORMABLE BARRIER) IN1D LEFT SIDE OF 200S MAZDA 6

VEHICLE CENTER OF GRAVITY Z-AXIS ACCELERATION

TRC INC.

F1VSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2

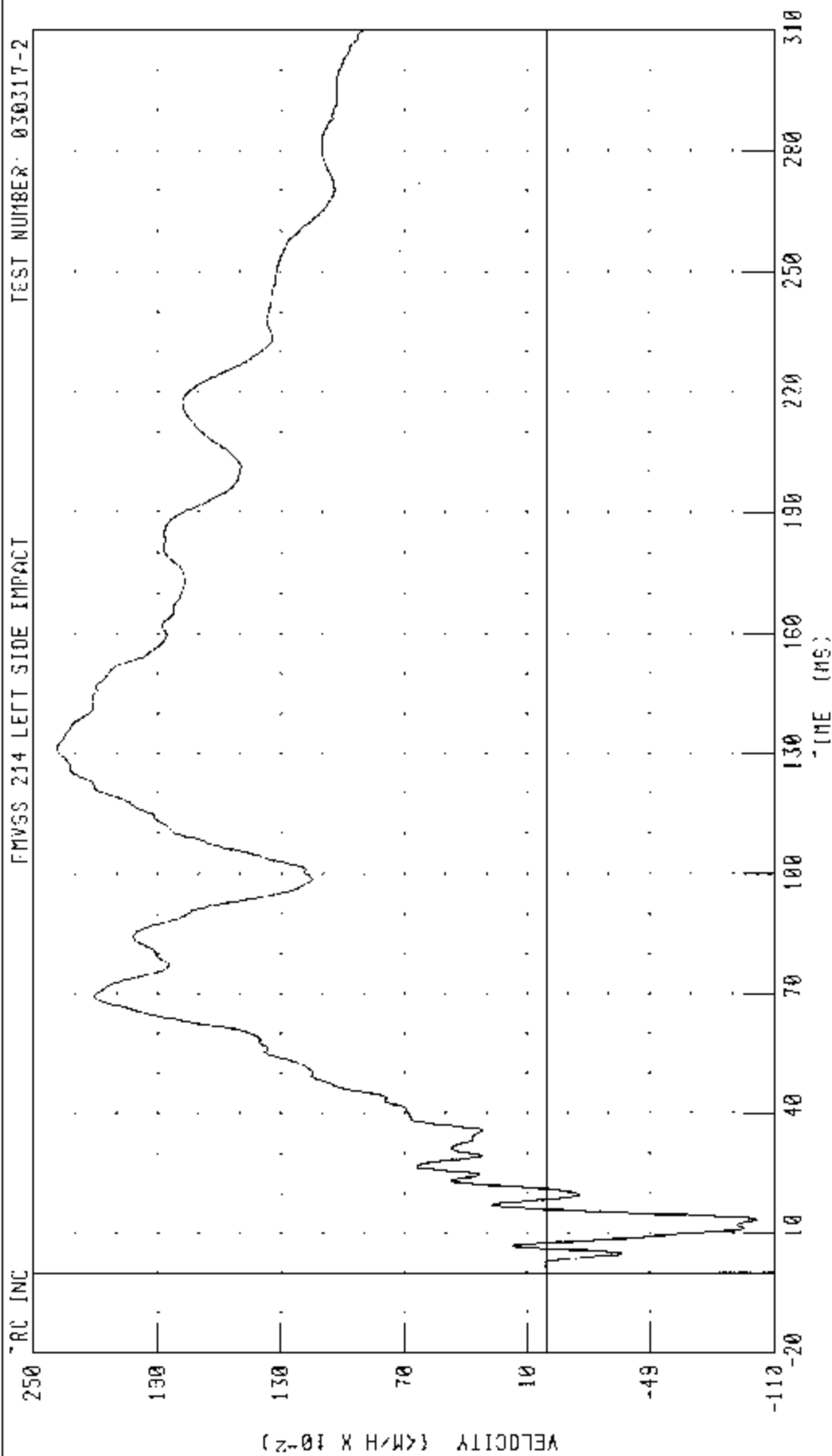


CHANNEL: VCCZC1 FILTER: CH. CLASS 60

PEAK DATA: 0 09 0 0 15.12 MS; -6.44 0 0 9 28 MS



55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
VEHICLE CENTER OF GRAVITY Z-AXIS VELOCITY



CHANNEL VCC7V1 FILTER: CH CLASS 100 PEAK DATA 2.38 KM/H @ 131.28 MS; -1 01 KM/H @ 13 44 MS

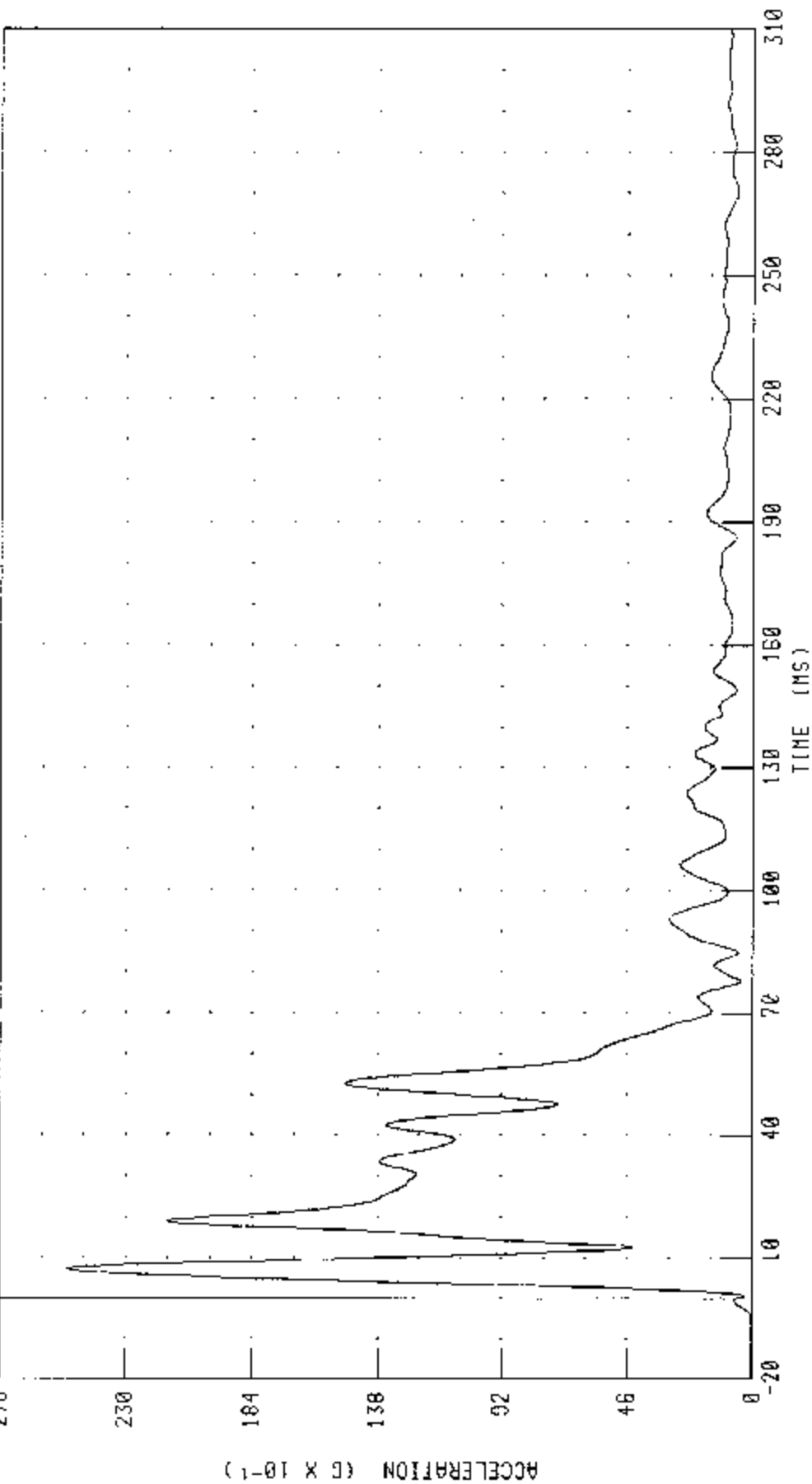
55/28 <PH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION

TEST NUMBER 030317-2

SVSS 214 LEFT SIDE IMPACT

TRC INC.



CHANNEL: VCCRC1 FILTER: CH. CLASS 60

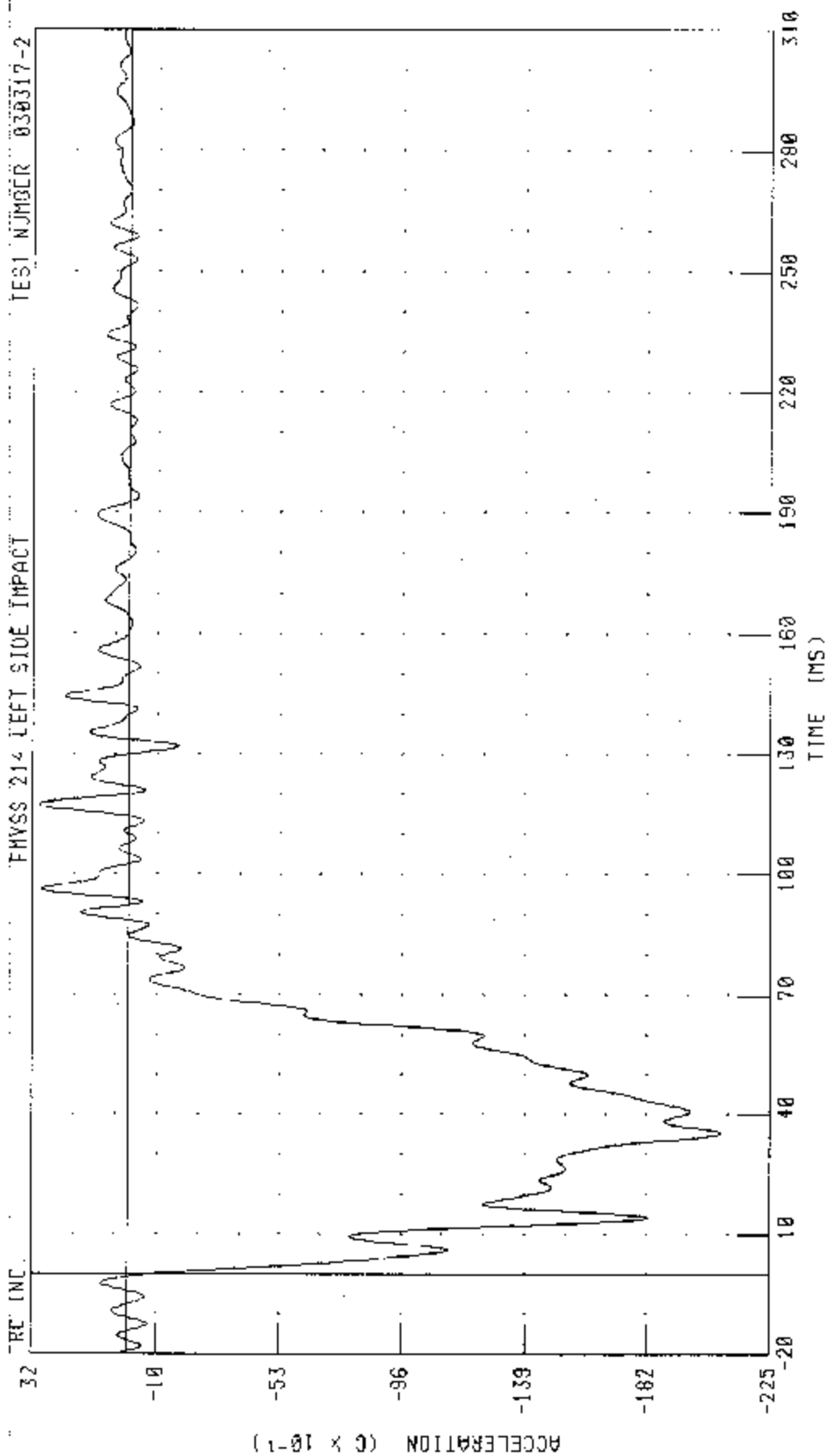
PEAK DATA: 25.14 G @ 7.28 MS, 0.02 G @ -18.32 MS

MDB Instrumentation Plots  
Acceleration Data - Filter Class 60  
Integration Data - Filter Class 180

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

NDB CENTER OF GRAVITY X AXIS ACCELERATION

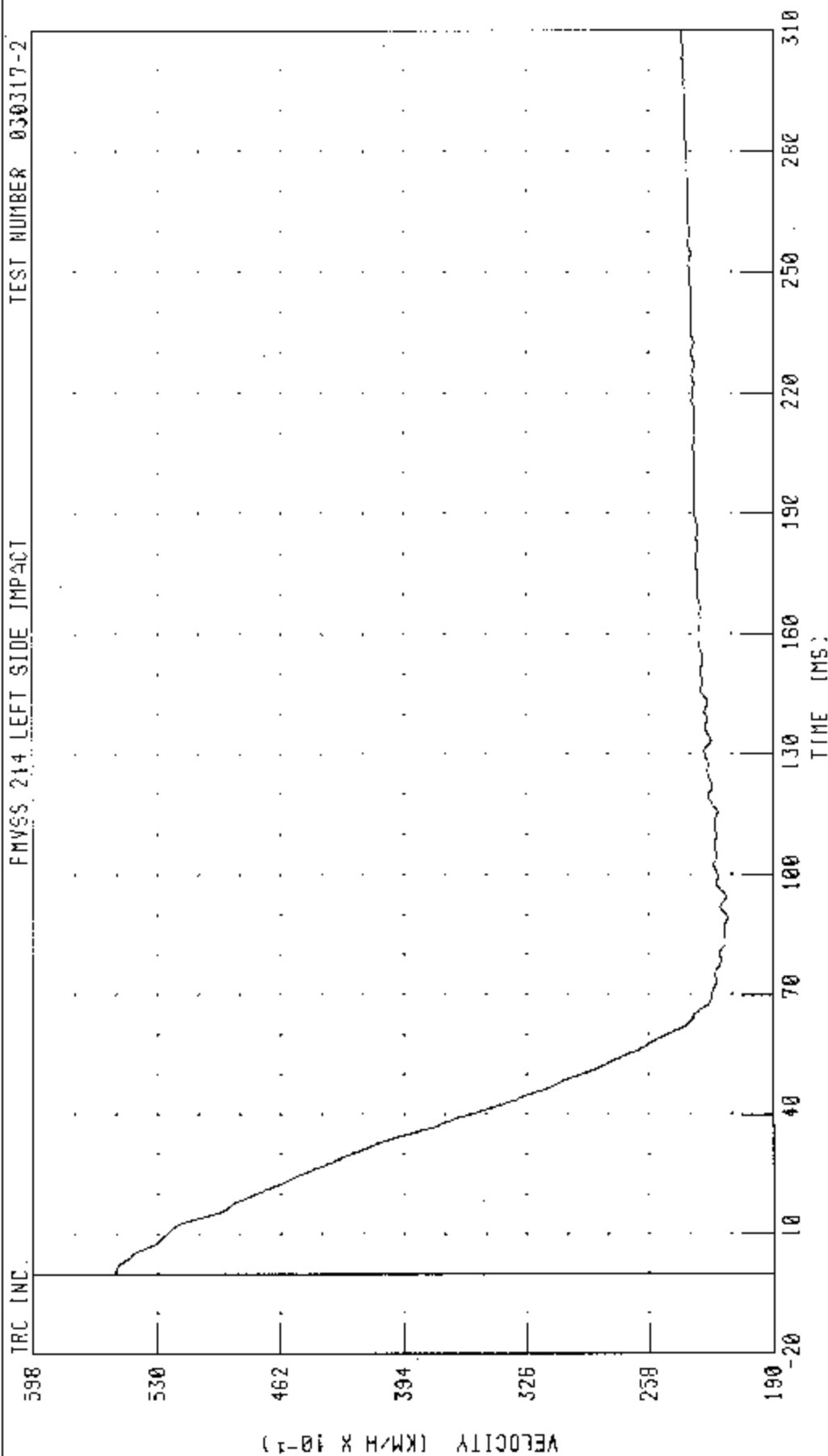
TEST NUMBER 030317-2



CHANNEL: BCCXG1 FILTER: CH. CLASS 50

PEAK DATA: 3.07 G @ 117.36 MS, -20.83 G @ 35.28 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MA7DA 6  
 MD3 CENTER OF GRAVITY X-AXIS VELOCITY



CHANNEL: BCCXV1 FILTER: CH CLASS 180 PEAK DATA 55.30 KM/H @ 0.00 MS; 21.45 KM/H @ 89.20 MS

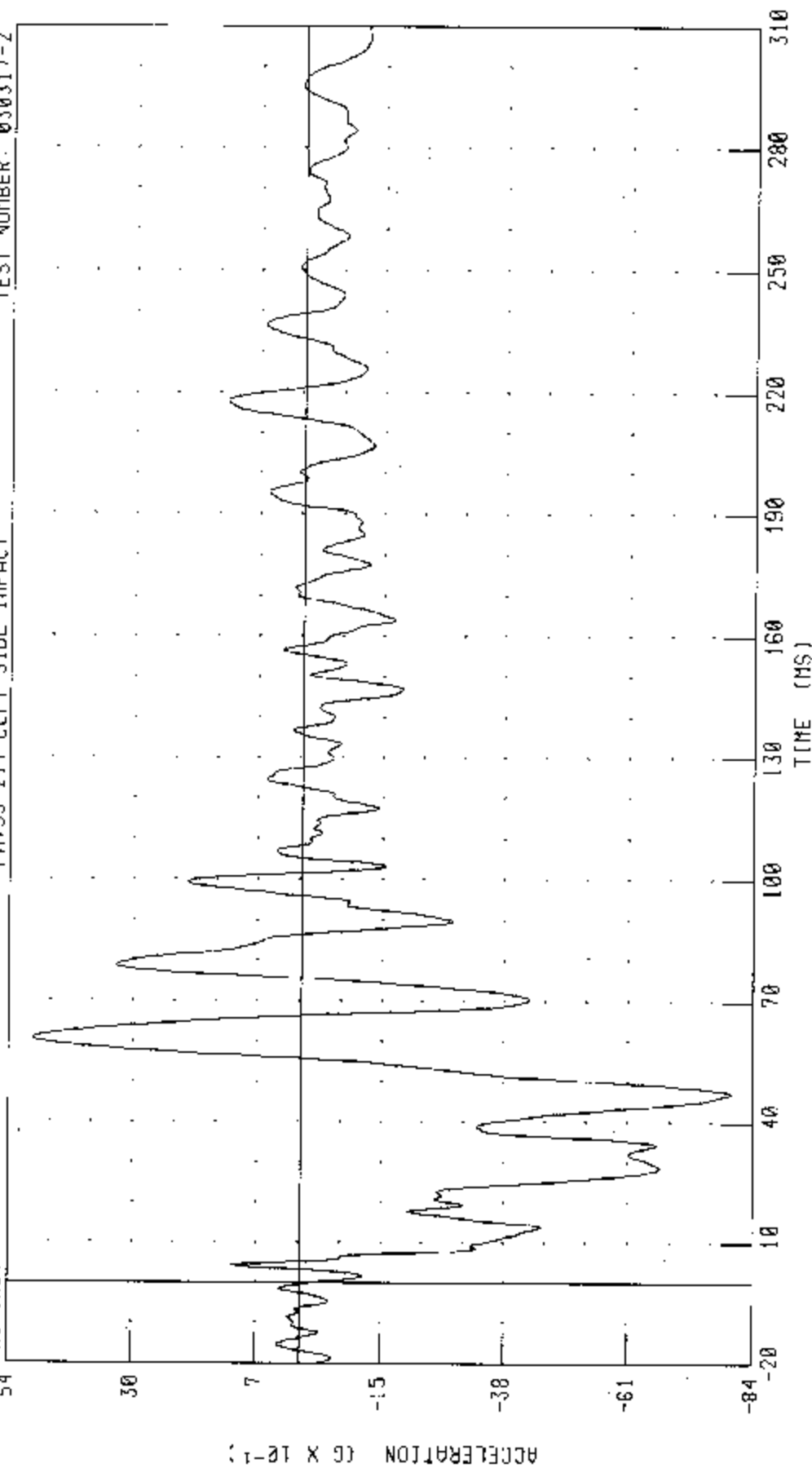
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

MOB CENTER OF GRAVITY Y-AXIS ACCELERATION

TRC INC

FAVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030317-2

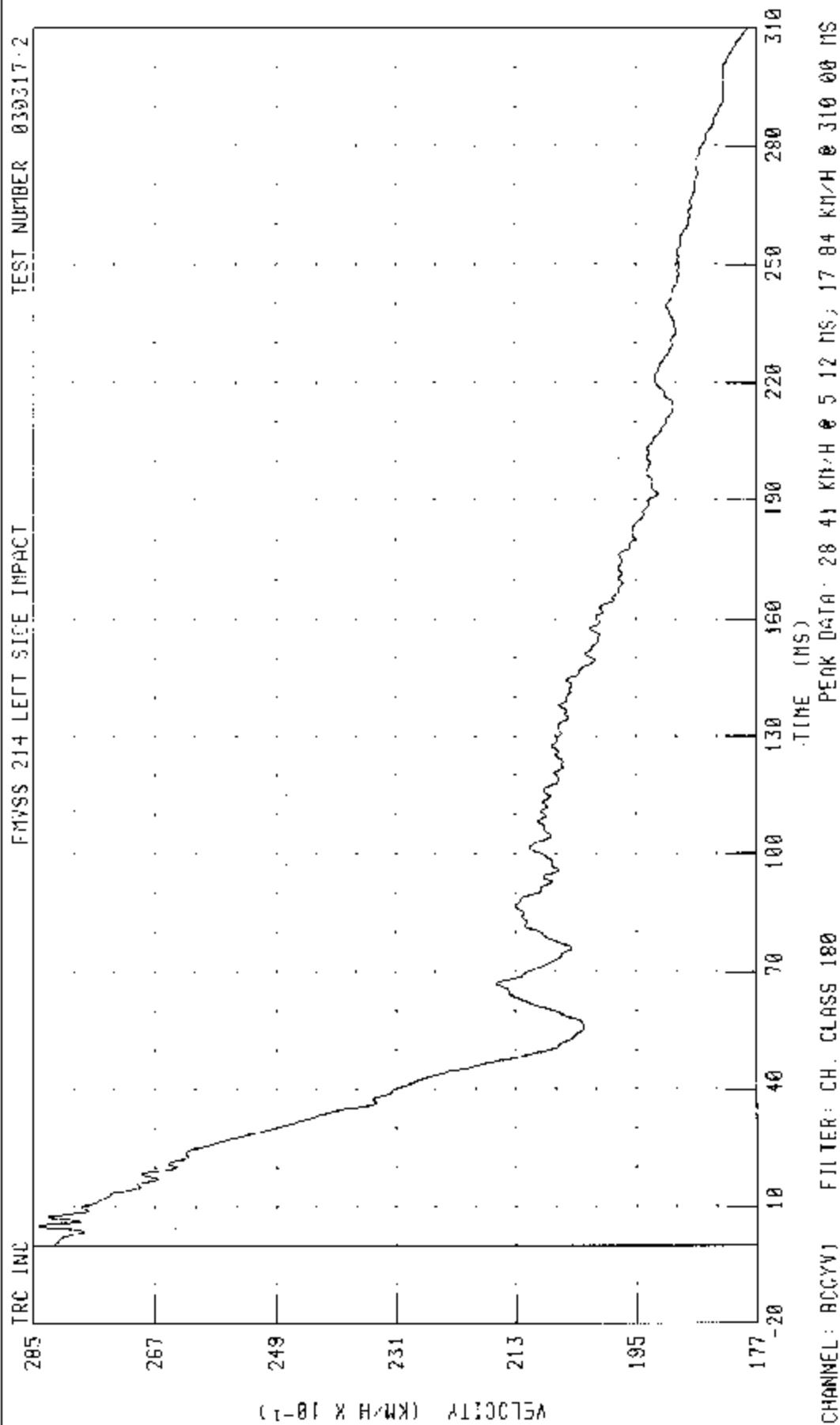


CHANNEL: BCCY01 FILTER: CH CLASS 60

PEAK DATA: 4.96 G @ 50.72 MS; -8.00 G @ 47.28 MS

55.78 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

FUE CENTER OF GRAVITY Y-AXIS VELOCITY



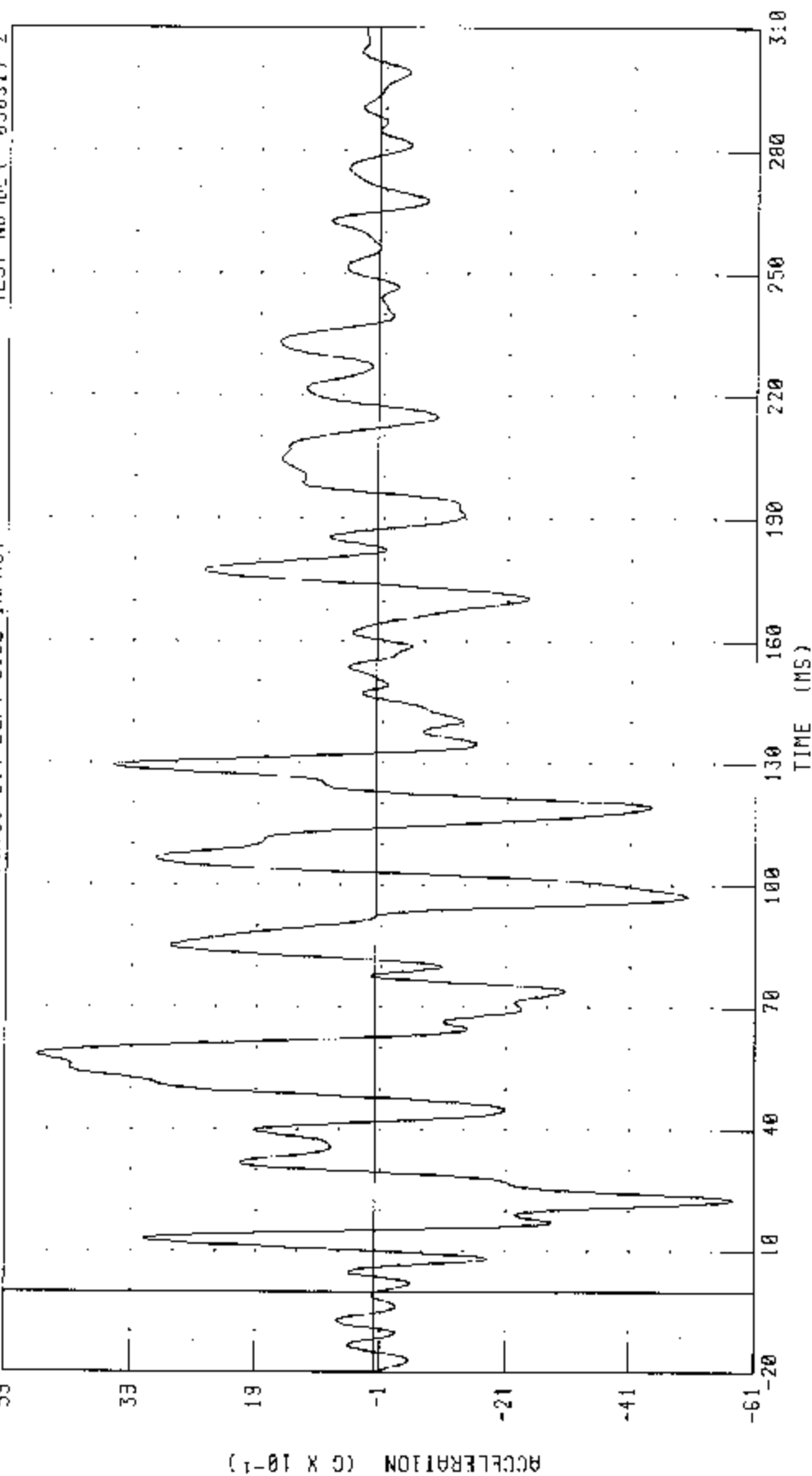
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMLABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA IS

NDB CENTER OF GRAVITY Z-AXIS ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2

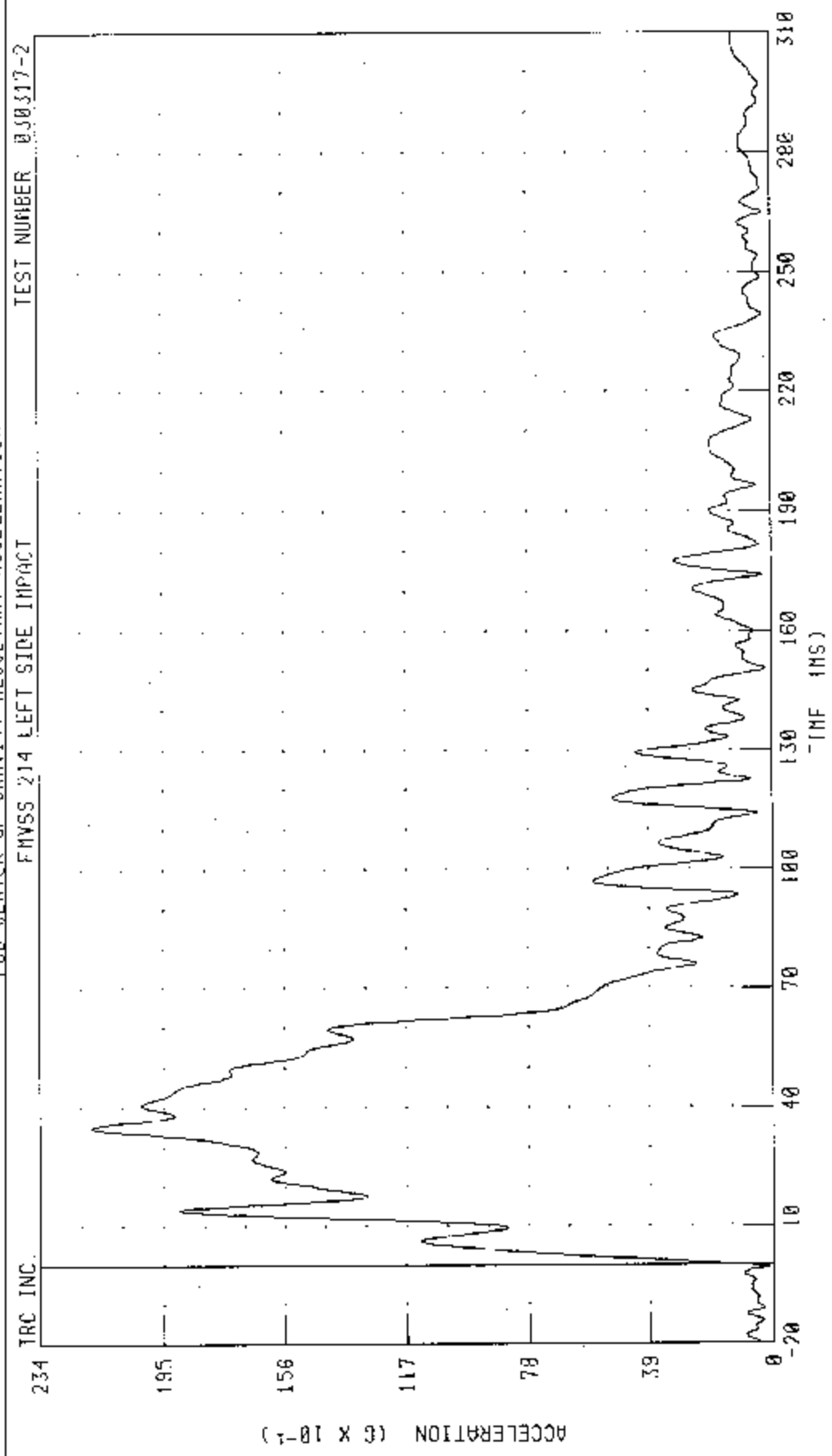


CHANNEL: BCGZG1 FILTER: CH CLASS 80

PEAK DATA: 539 G @ 58.56 MS, -5.76 G @ 22.80 MS



55/28 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO EAST SIDE OF 2003 MAZDA S  
 PCR CENTER OF GRAVITY RESULTANT ACCELERATION



TEST NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT

TRC INC.

PEAK DATA: 21 79 G @ 35.12 MS; 0.15 G @ -0.56 MS

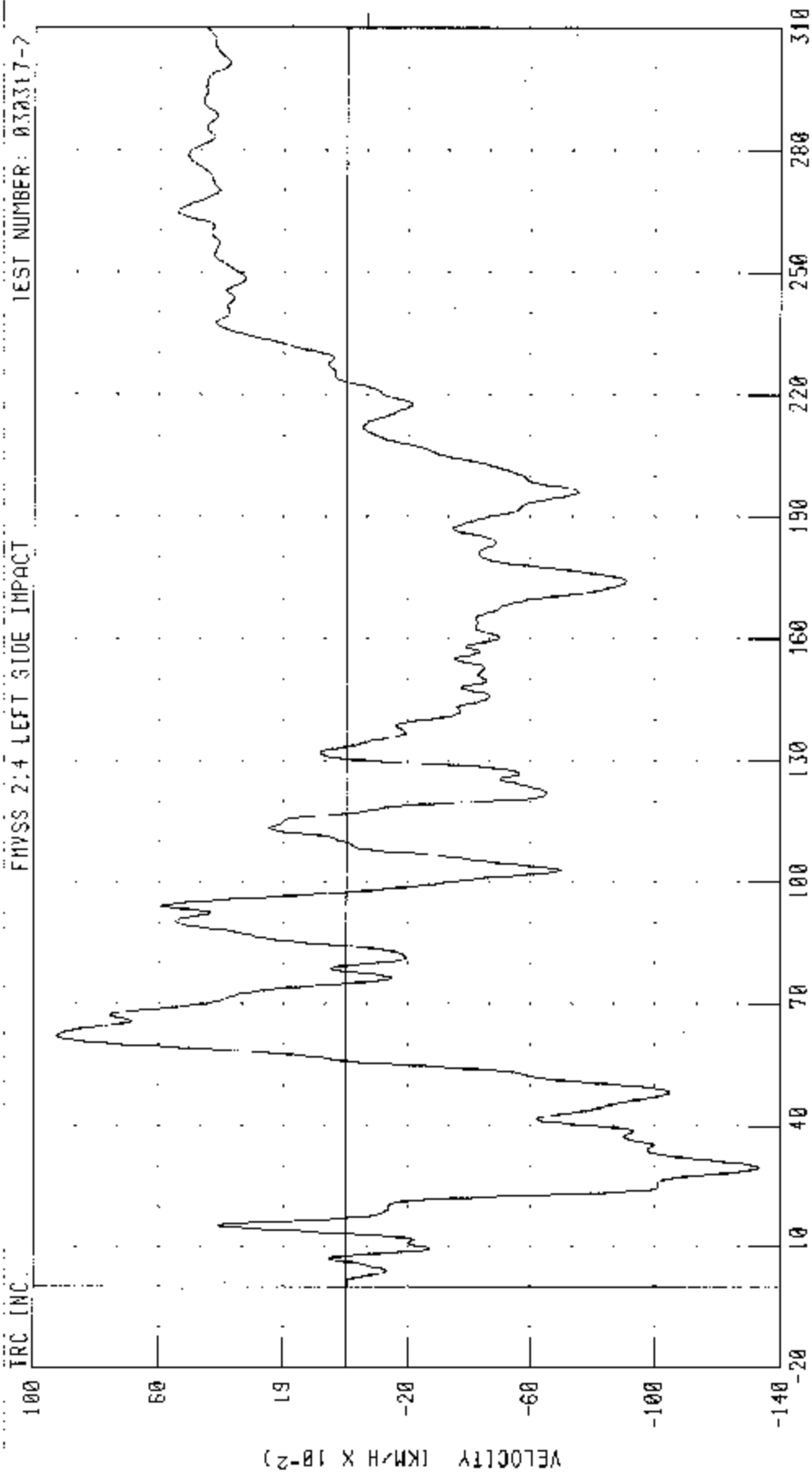
CHANNEL: BCG01 FILTER: CH CLASS 60

55/23 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA R

FOB CENTER OF GRAVITY Z-AXIS VELOCITY

FMVSS 2.4 LEFT SIDE IMPACT

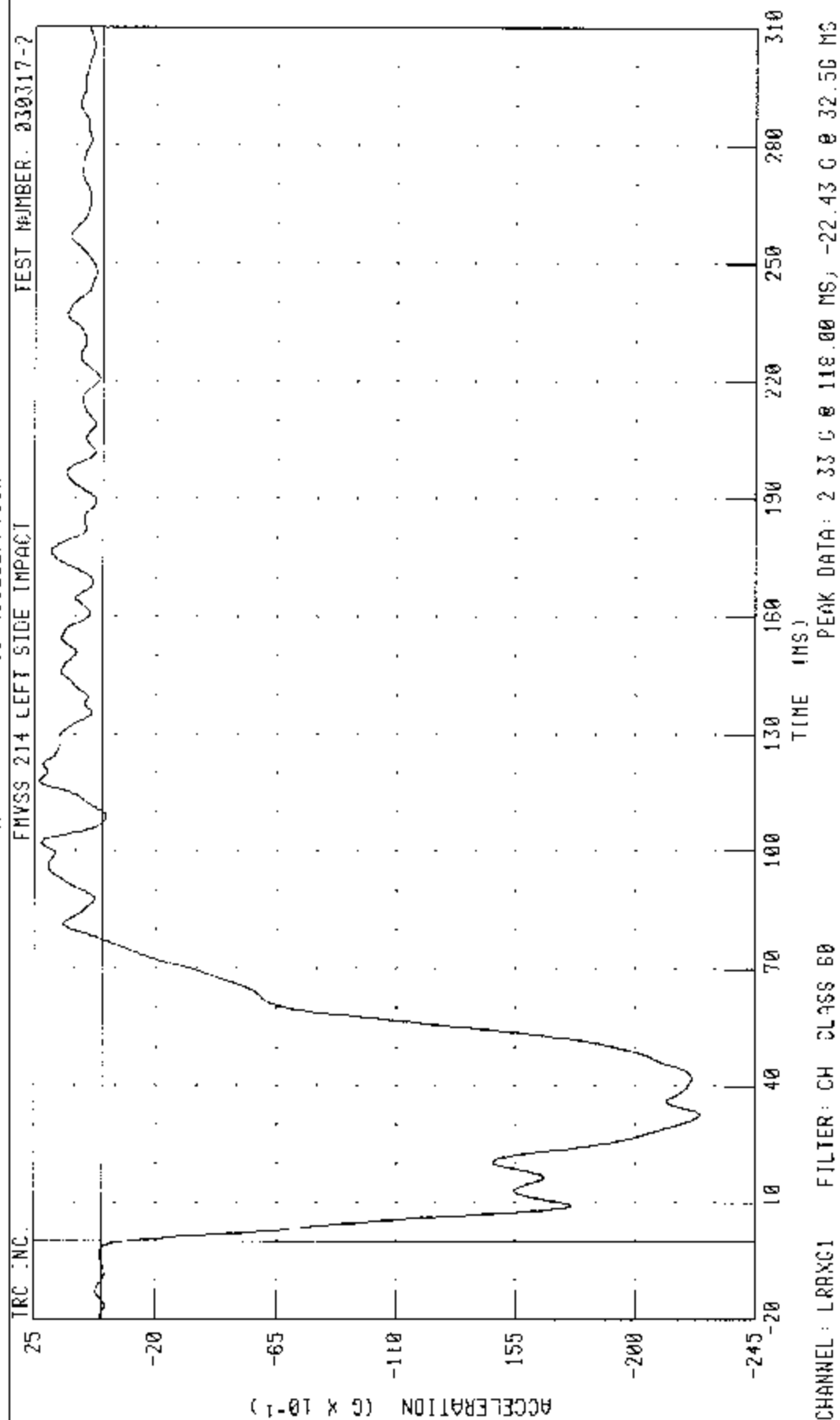
TEST NUMBER: 030317-2



CHANNEL: BCC2V1 FILTER: CH. CLASS 180

PEAK DATA 0 92 KM/H @ 62 32 MS; -1.33 KM/H @ 29 68 MS

55/20 KPH 90 DEGREE STIFF IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 20R3 MAZDA 6  
 H08 LEFT REAR X-AXIS ACCELERATION

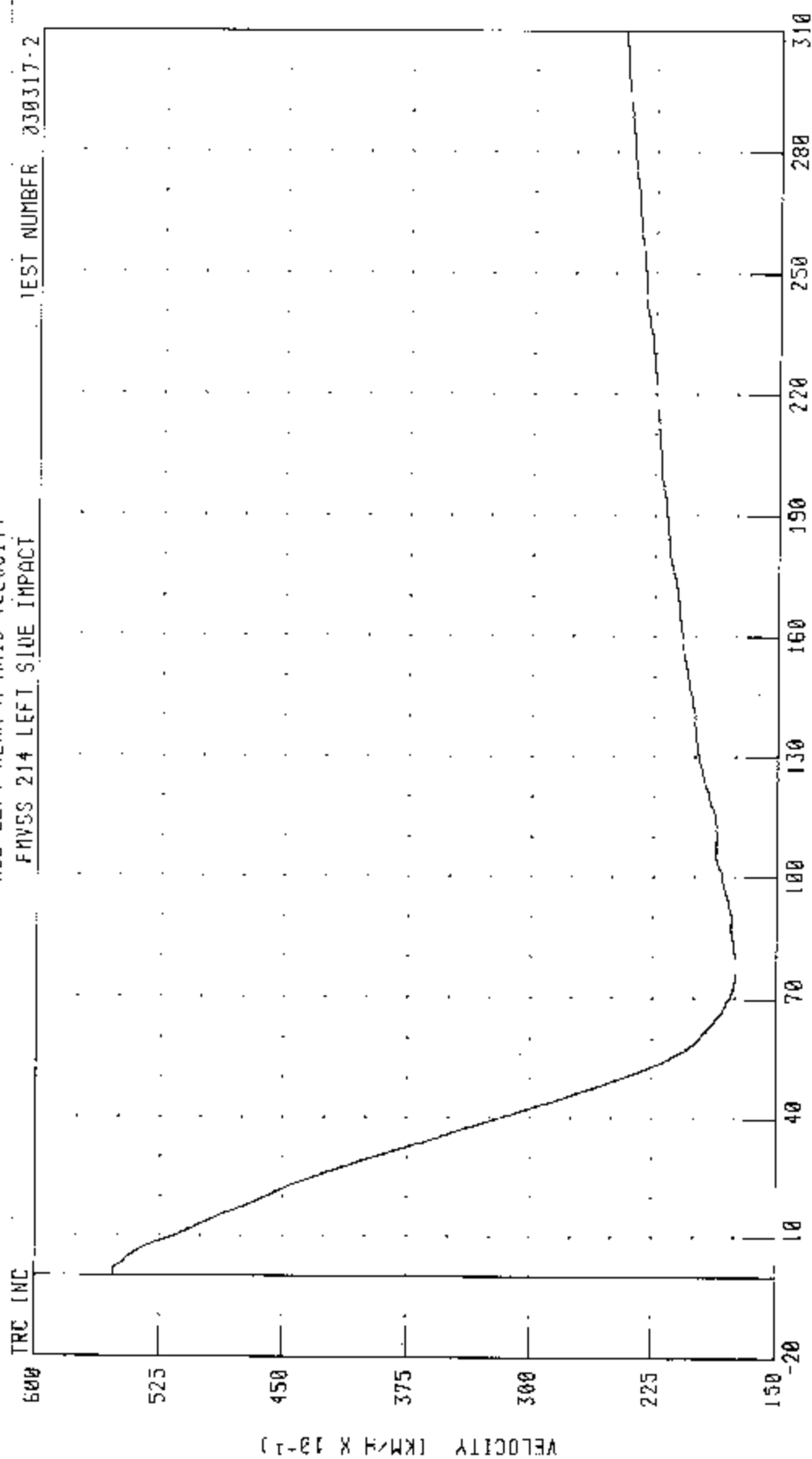


55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA C

MOB LEFT REAR X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2

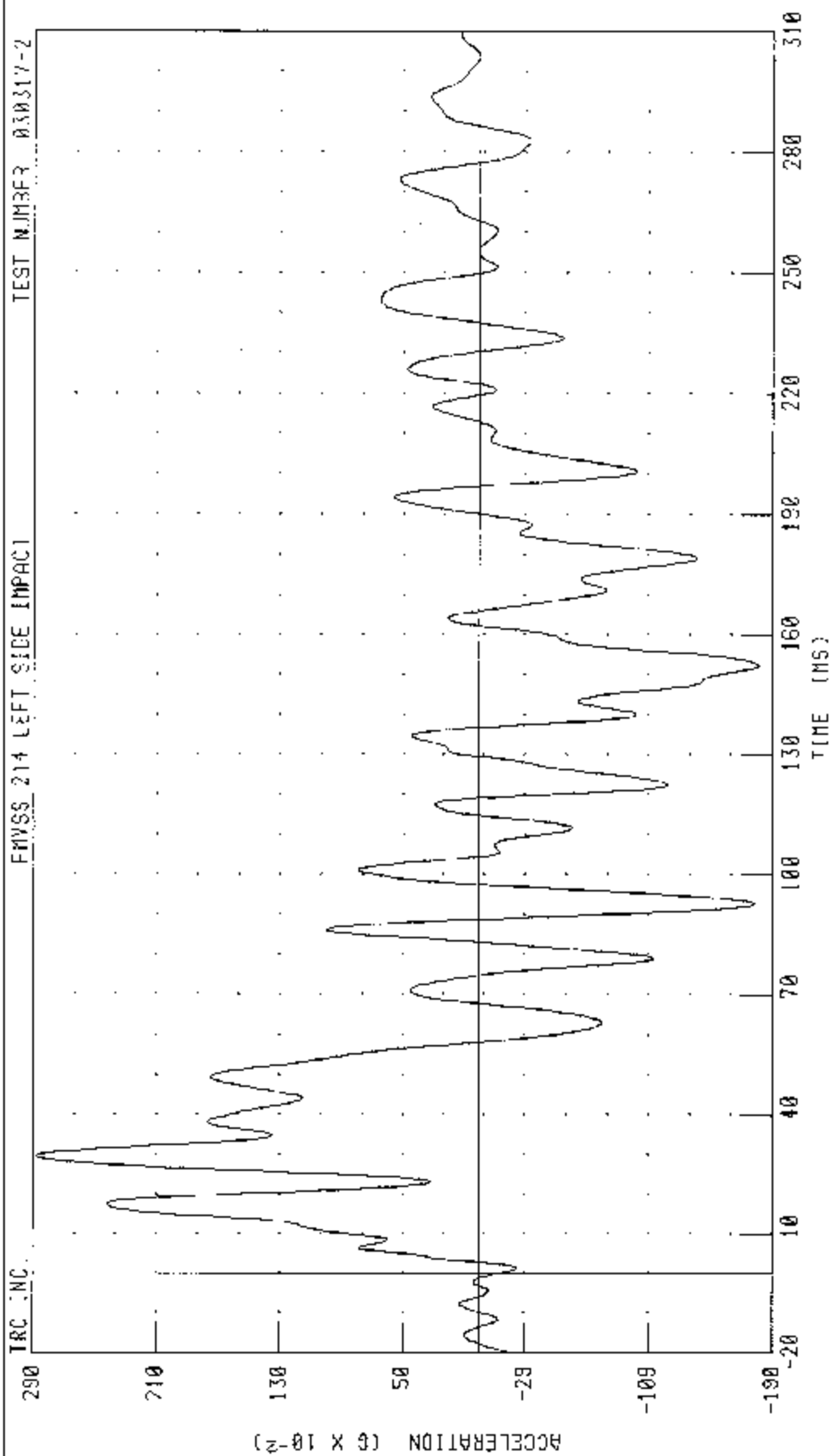


TIME (MS)

CHANNEL: LRRXV1 FILTER: CH. CLASS 180

PEAK DATA 55 34 KM/H @ 1 12 15; 17 41 KM/H @ 79 28 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 MDB LEFT REAR Y-AXIS ACCELERATION



CHANNEL - LRRY01 FILTER CH. CLASS 60 PEAK DATA: 2 88 0 @ 29.68 MS; -1 81 0 @ 152 74 MS

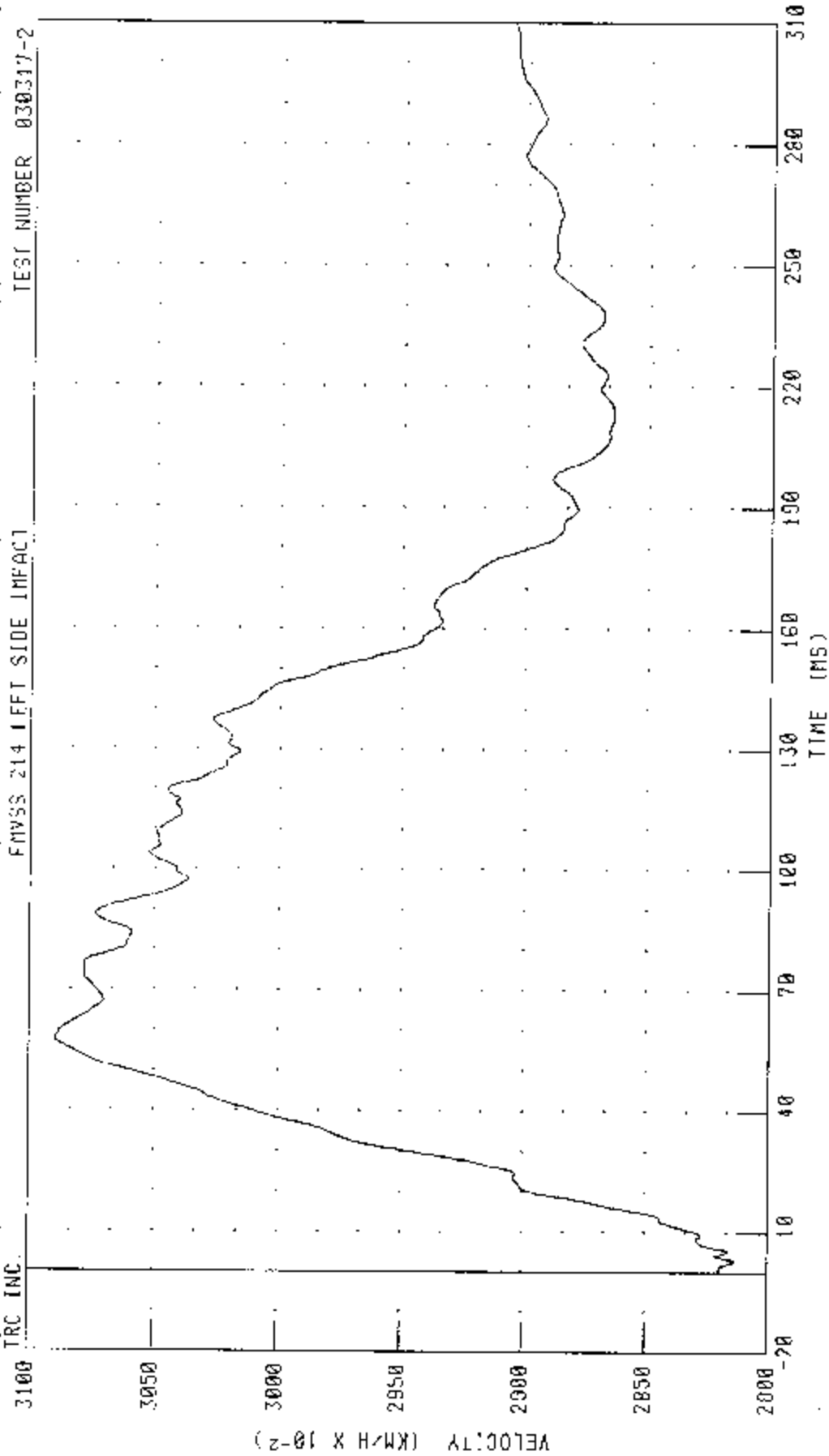
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

M06 LEFT REAR Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2

TRC INC.



CHANNEL: LRRYV1 FILTER: CH. CLASS: 00

TIME (MS)

PEAK DATA 30.50 KM/H @ 57.52 MS, 28.14 KM/H @ 2.88 MS

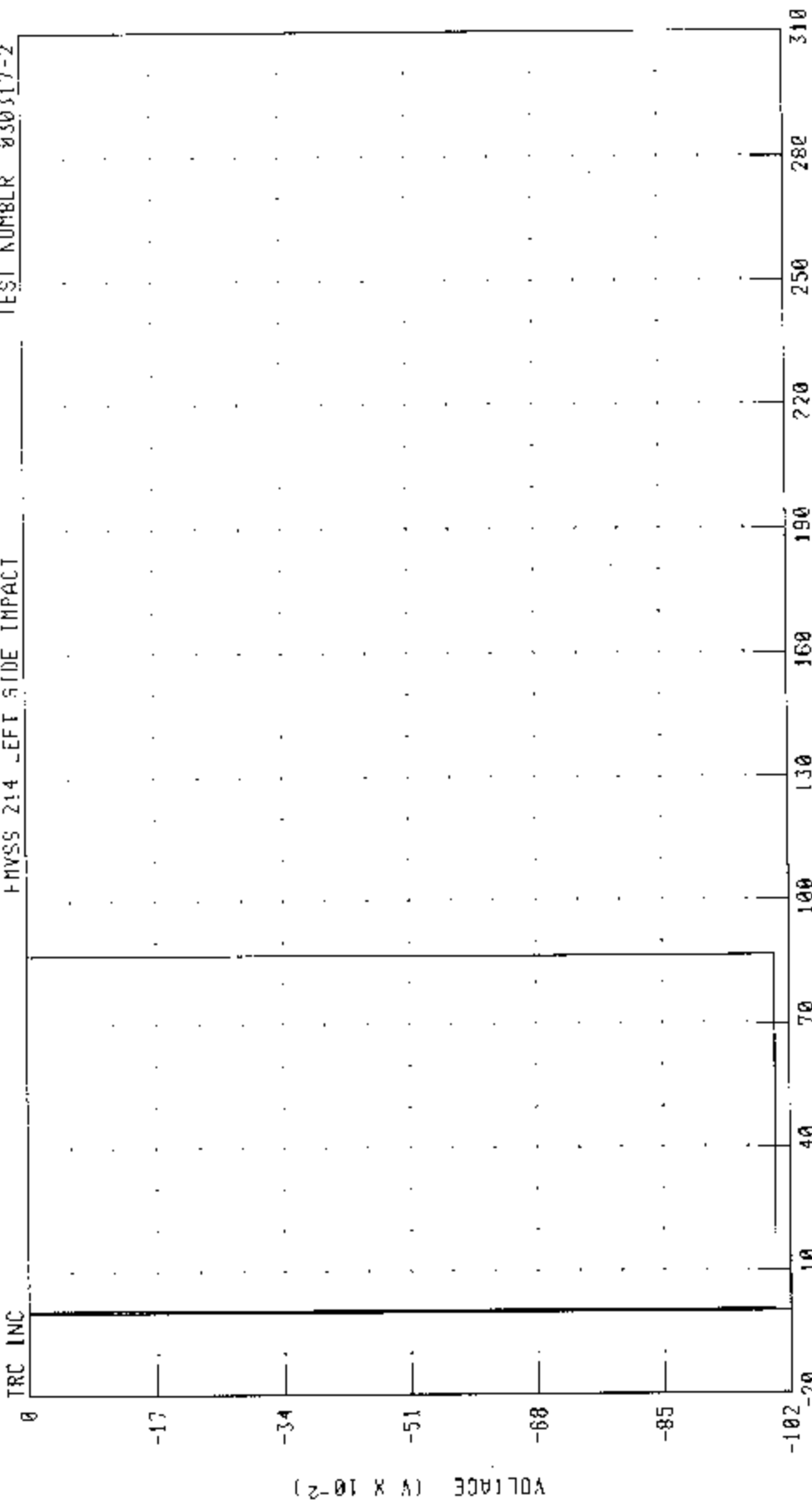
55/28 KPII 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 200.5 MP20A 6

MOB RIGHT SIDE CONTACT SWITCH

TEST NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT

TRC INC



VOLTAGE (V X 10<sup>-2</sup>)

TIME (MS)

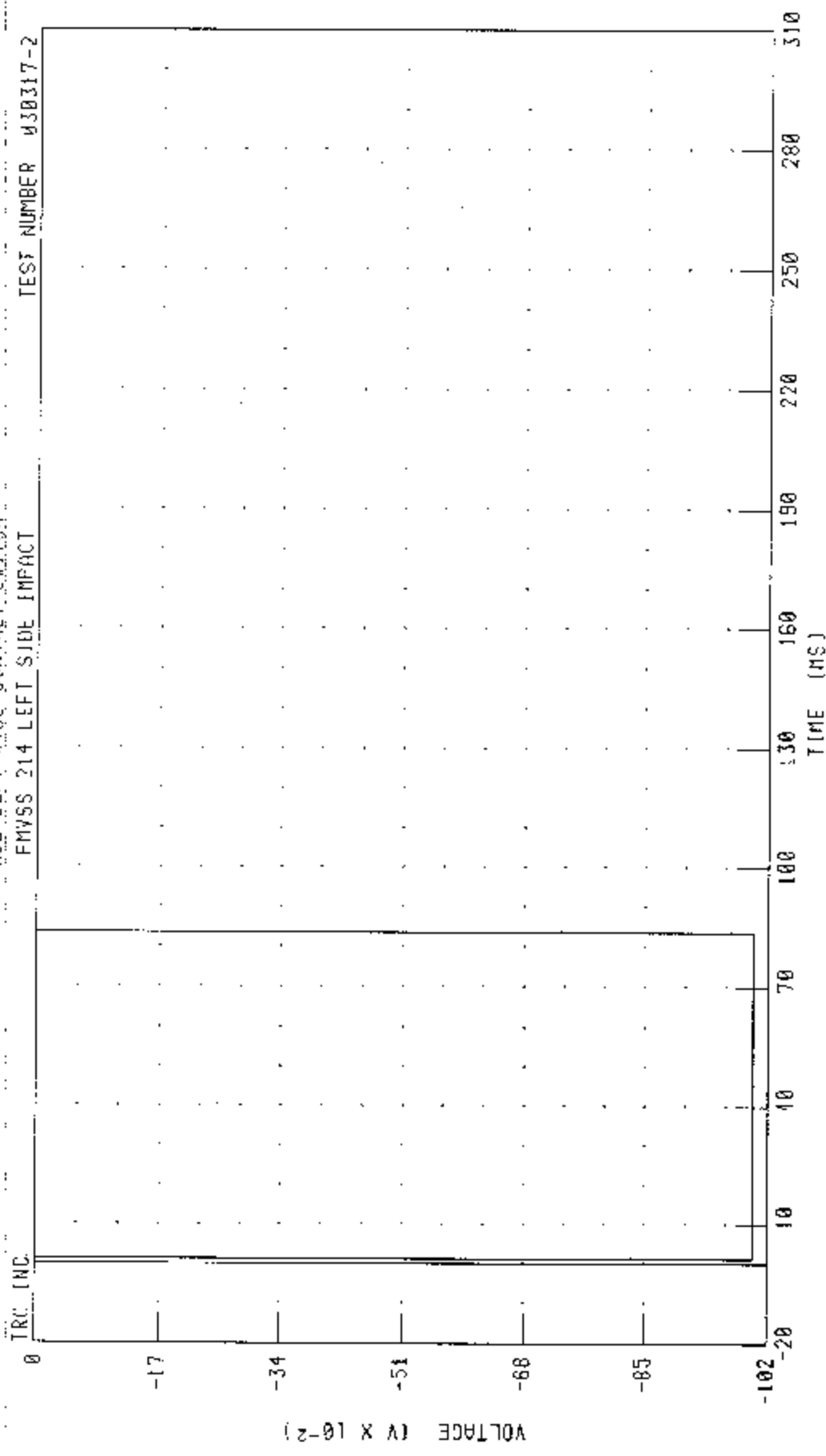
PEAK DATA 0.00 V @ 310.00 MS, -1.00 V @ 0.50 MS

CHANNEL MOBRI FILTER: CH. CLASS 1000

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

MOB LEFT SIDE CONTACT SWITCH  
FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2



TIME (MS)

CHANNEL MOBL1 FILTER: CH. CLASS 1000

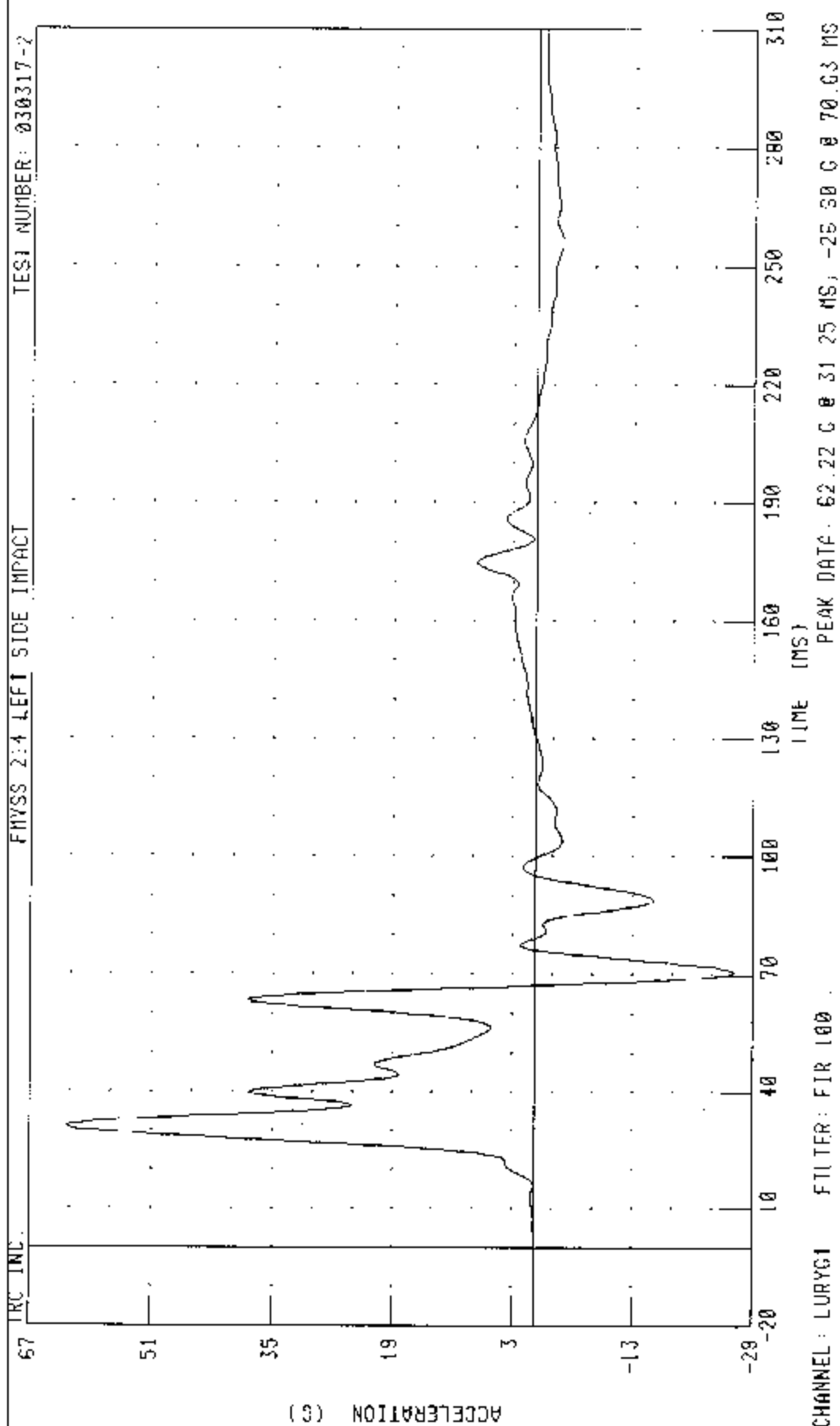
PEAK DATA: 0.00 V @ 310.00 MS, -1.00 V @ 1.36 MS



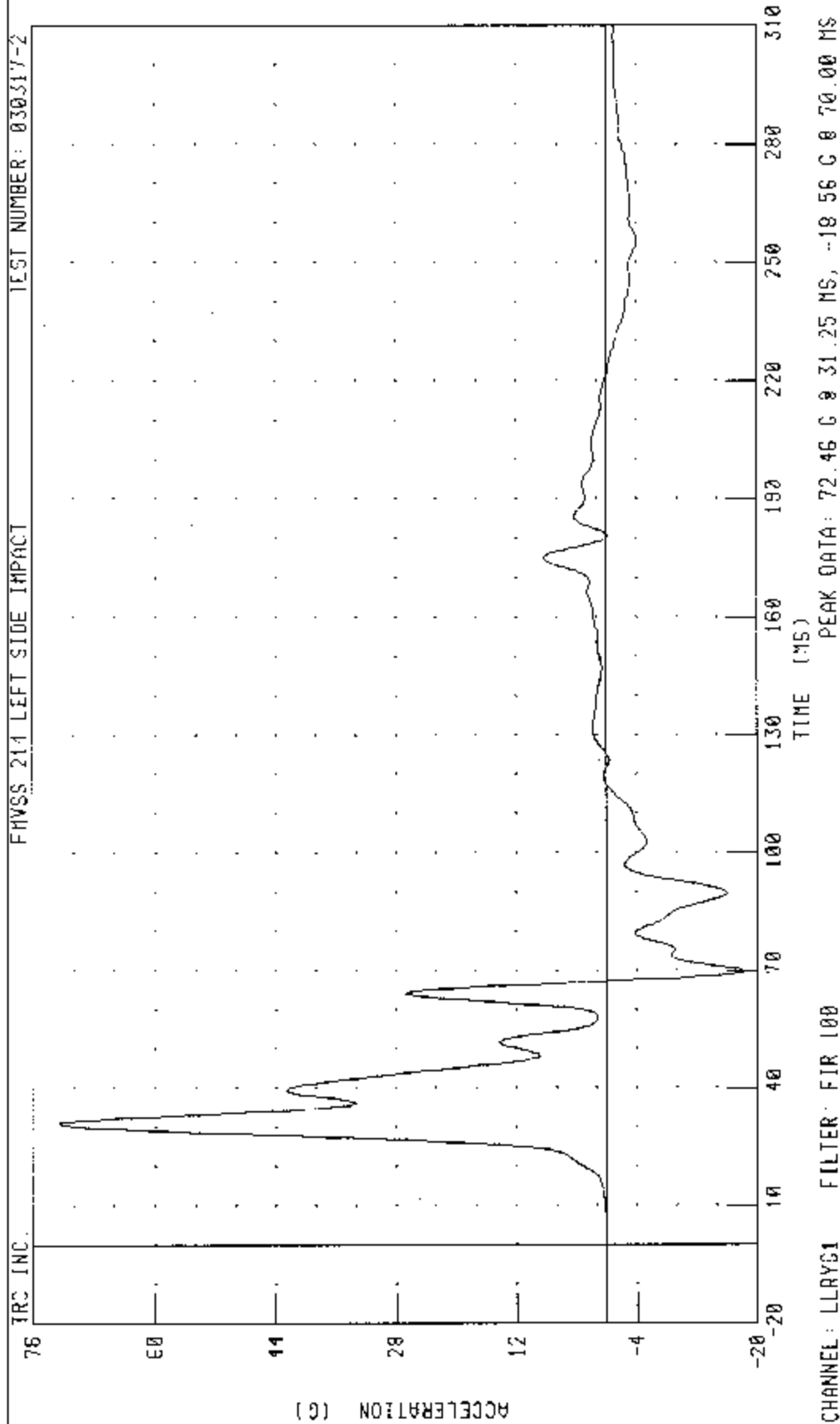
Driver and Passenger Dummy Instrumentation Plots  
Acceleration Data - FIR Filtered

55/23 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER UPPER RIB Y-AXIS ACCELERATION



55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 DRIVER LOWER RIB Y-AXIS ACCELERATION



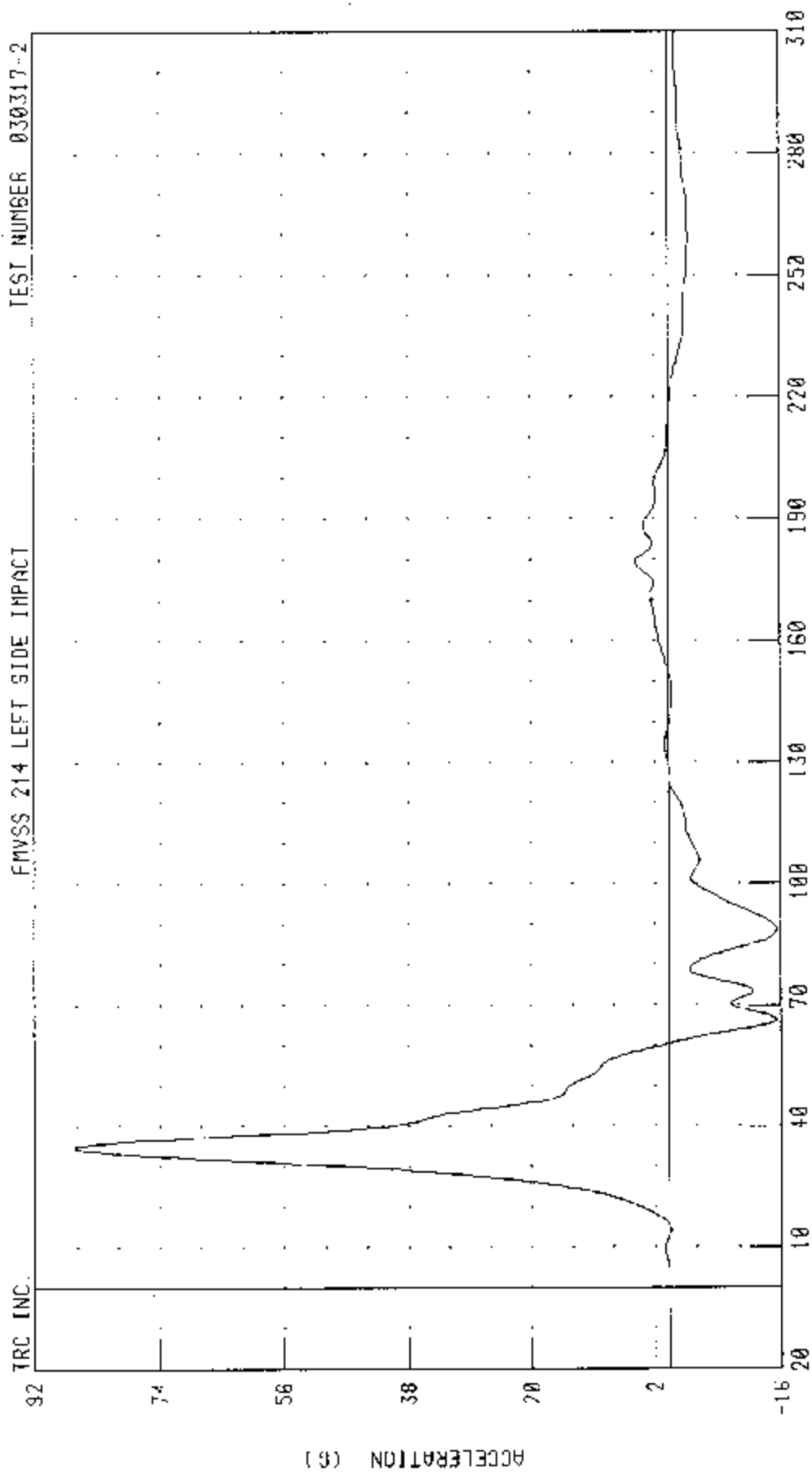
55/28 KPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 MAZDA 6

DRIVER LOWER SPINE Y-AXIS ACCELERATION

TEST NUMBER 030317-2

FMVSS 214 LEFT SIDE IMPACT

TRC INC.

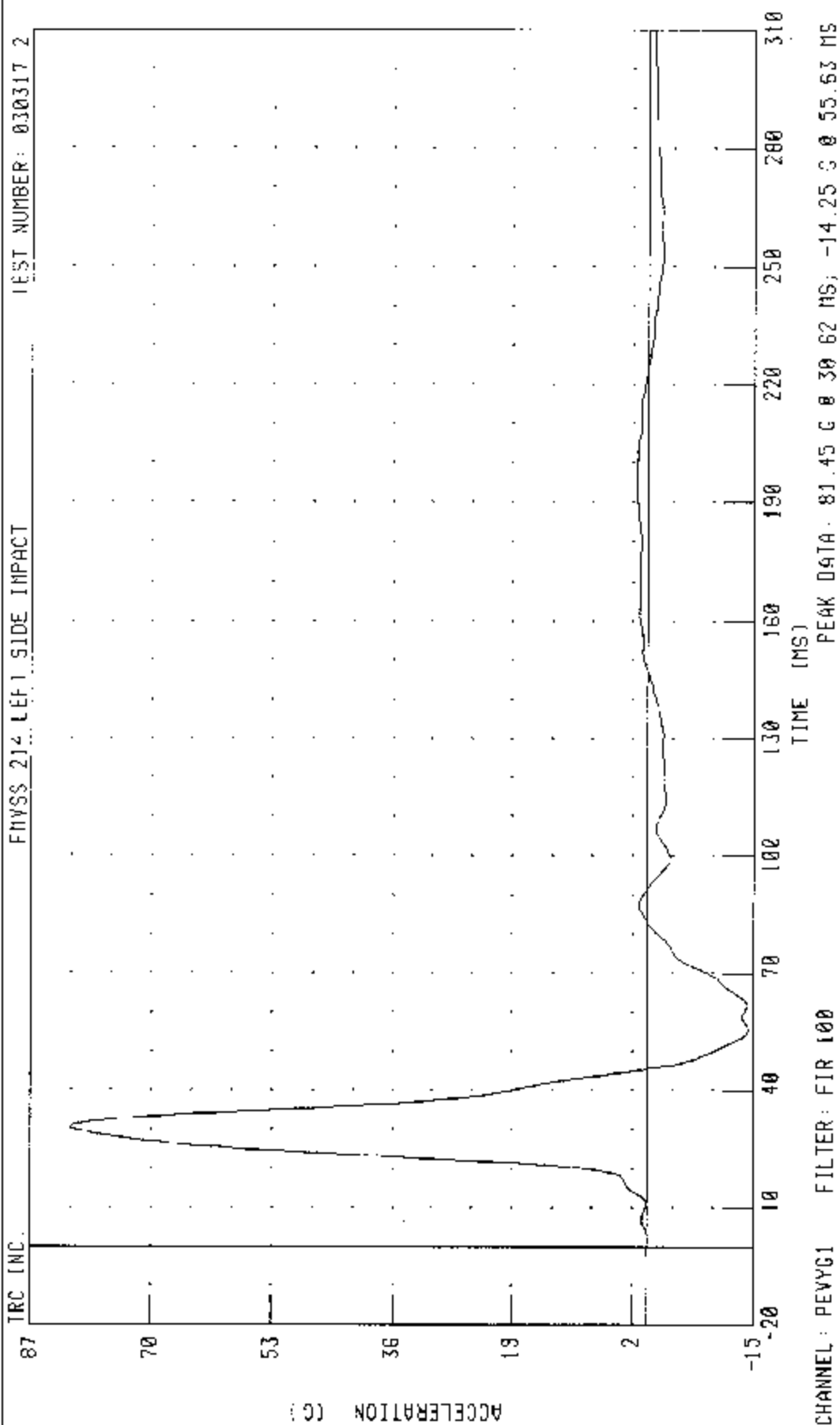


CHANNEL: T12YG1 FILTER: FIR 100

TIME (MS)

PEAK DATA 88.45 G @ 35.08 MS; -15.41 G @ 80.75 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 DRIVER PELVIS Y AXIS ACCELERATION



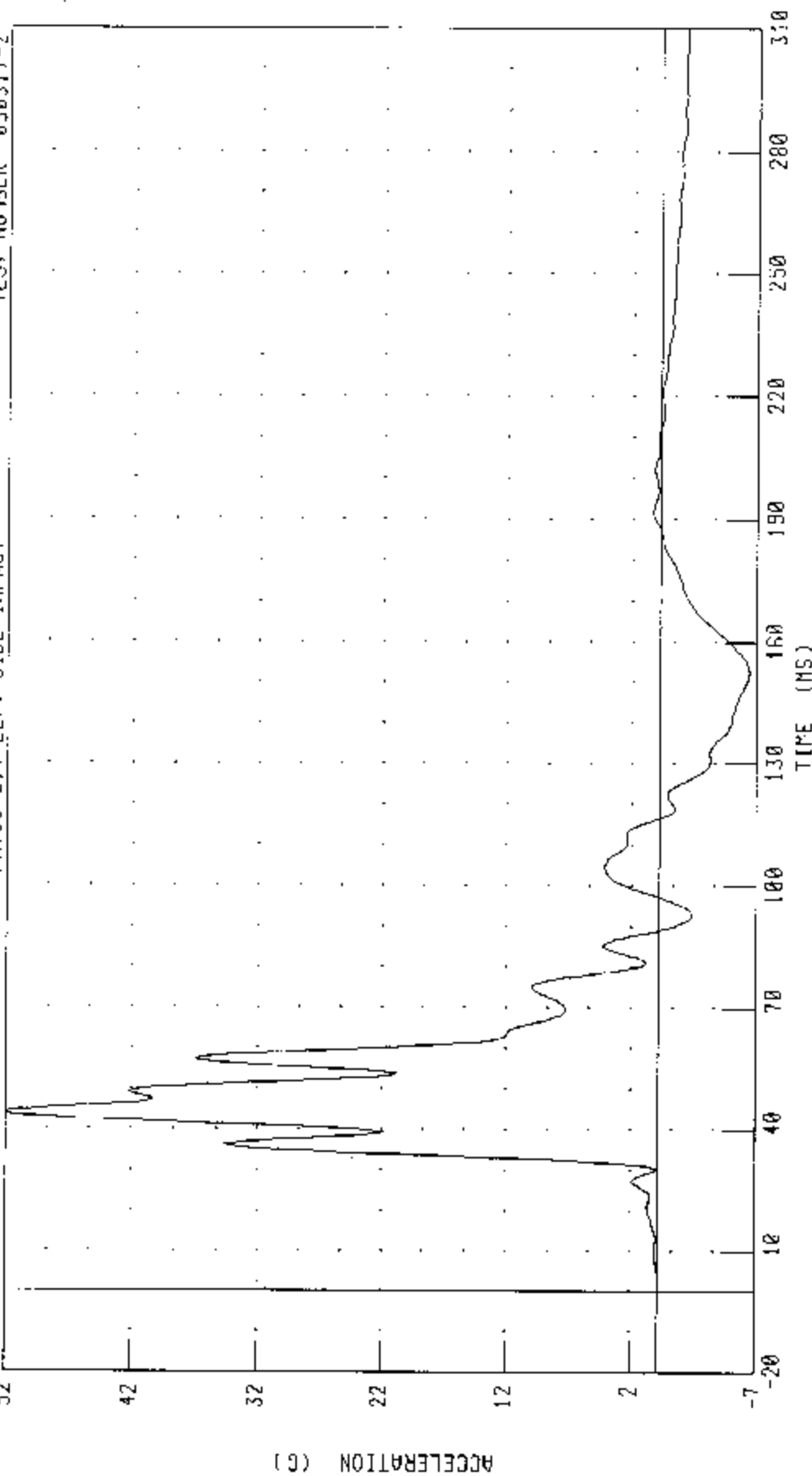
55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER UPPER RIB Y-AXIS ACCELERATION

TRC INC.

FMVSS 214 (LEFT) SIDE IMPACT

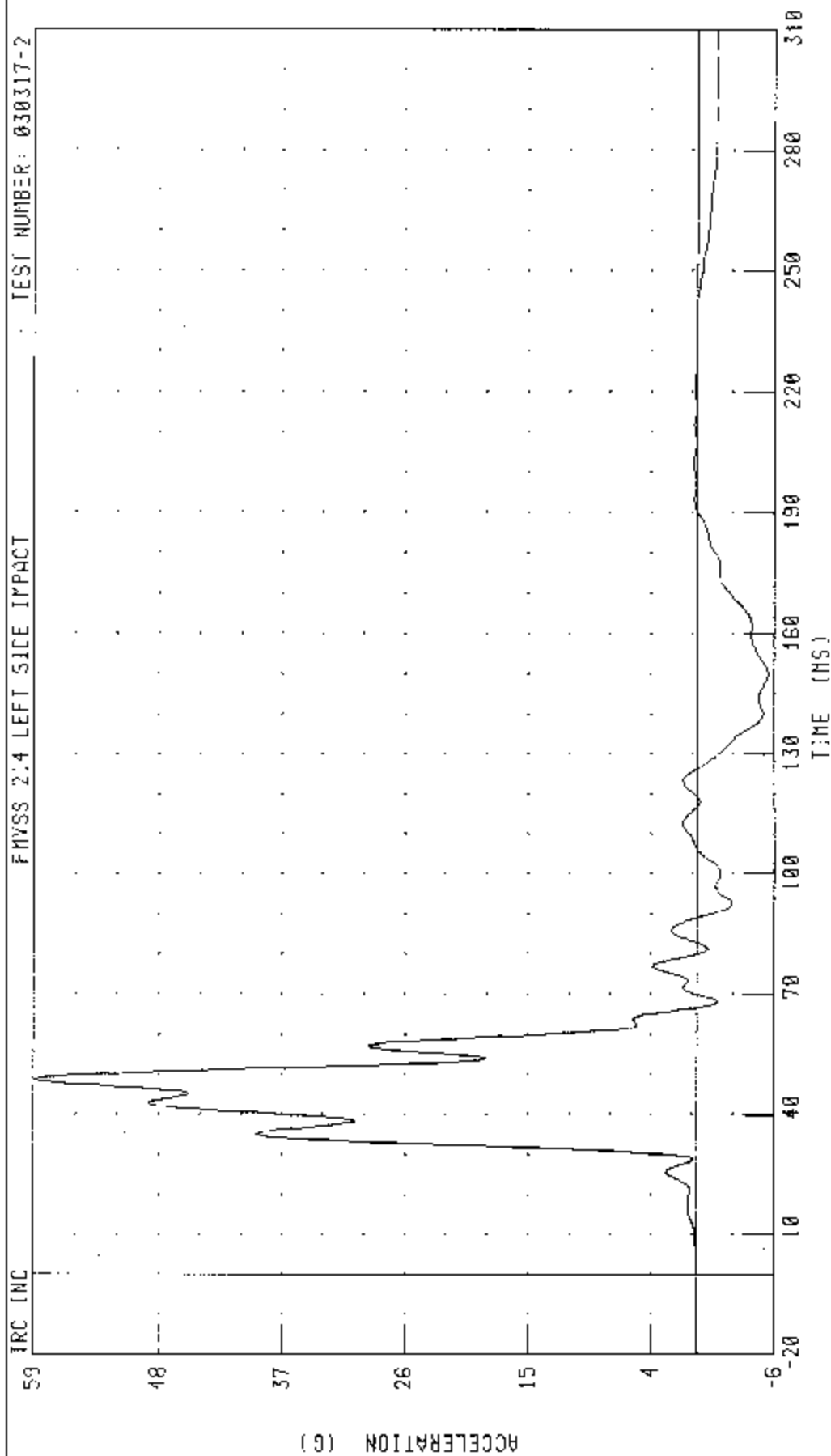
TEST NUMBER: 030317-2



CHANNEL: LURYC4 FILTER: FIR 100

PEAK DATA: 52.40 G @ 43.75 MS, -7.18 G @ 152.50 MS

55/23 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2018.5 MAZDA 6  
LEFT REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION



CHANNEL: ILRYG4 FILTER: FIR 100

PEAK DATA: 59.06 G @ 48.75 MS, -6.31 G @ 150.00 MS

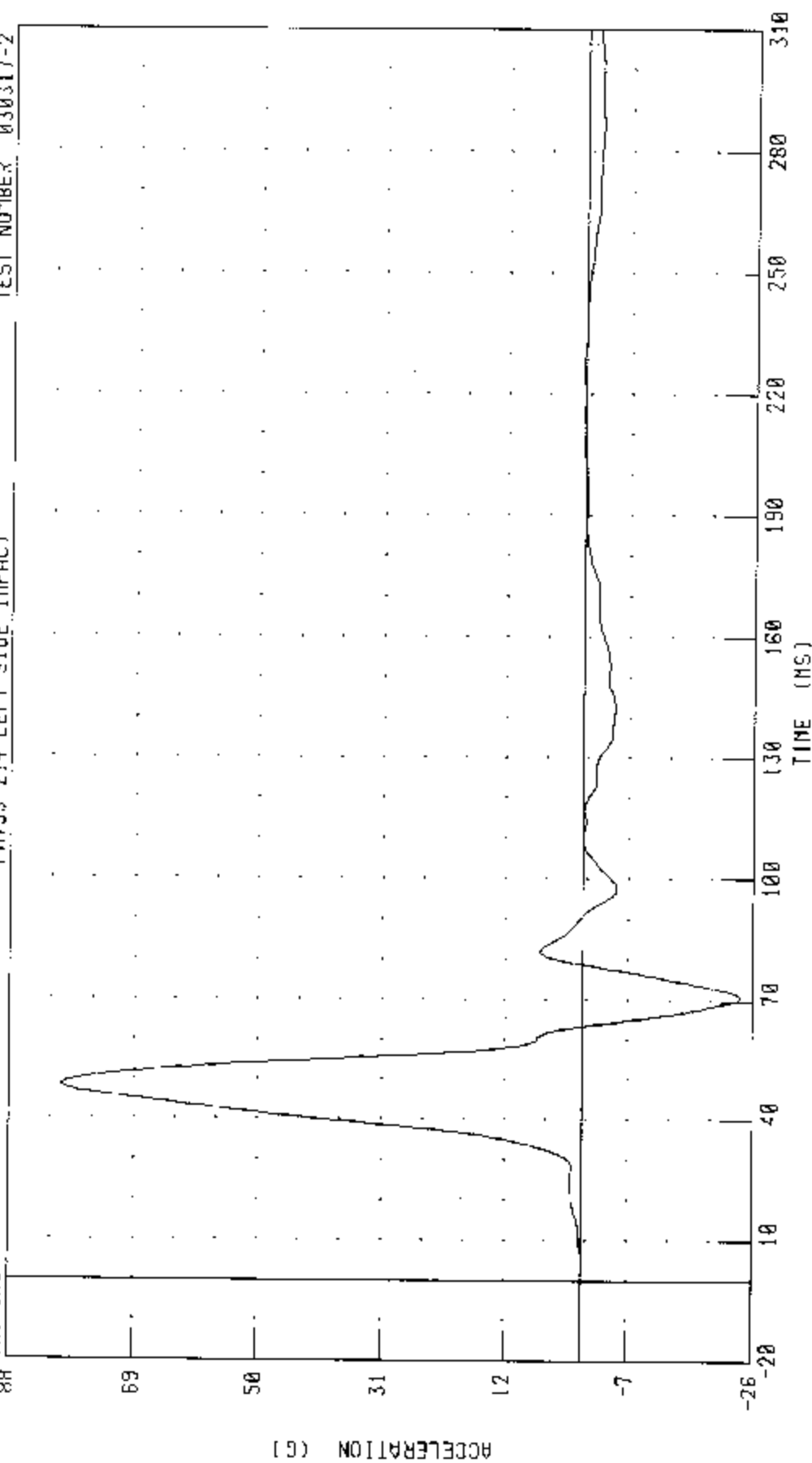
55/23 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION

TRC INC

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2

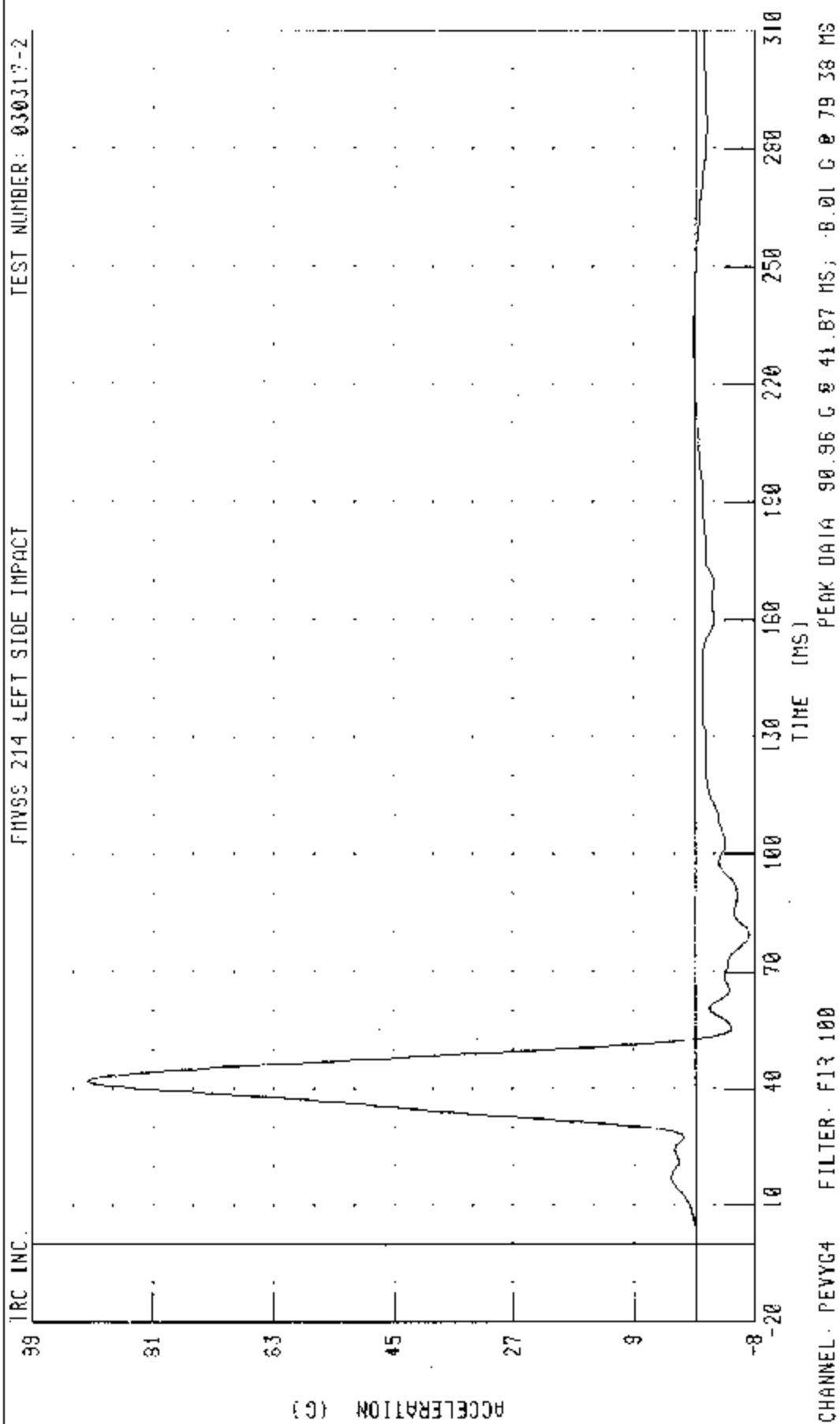


CHANNEL T12YG4 FILTR: FTR 100

PEAK DATA 80.21 G @ 48.75 MS; -24.00 G @ 70.63 MS

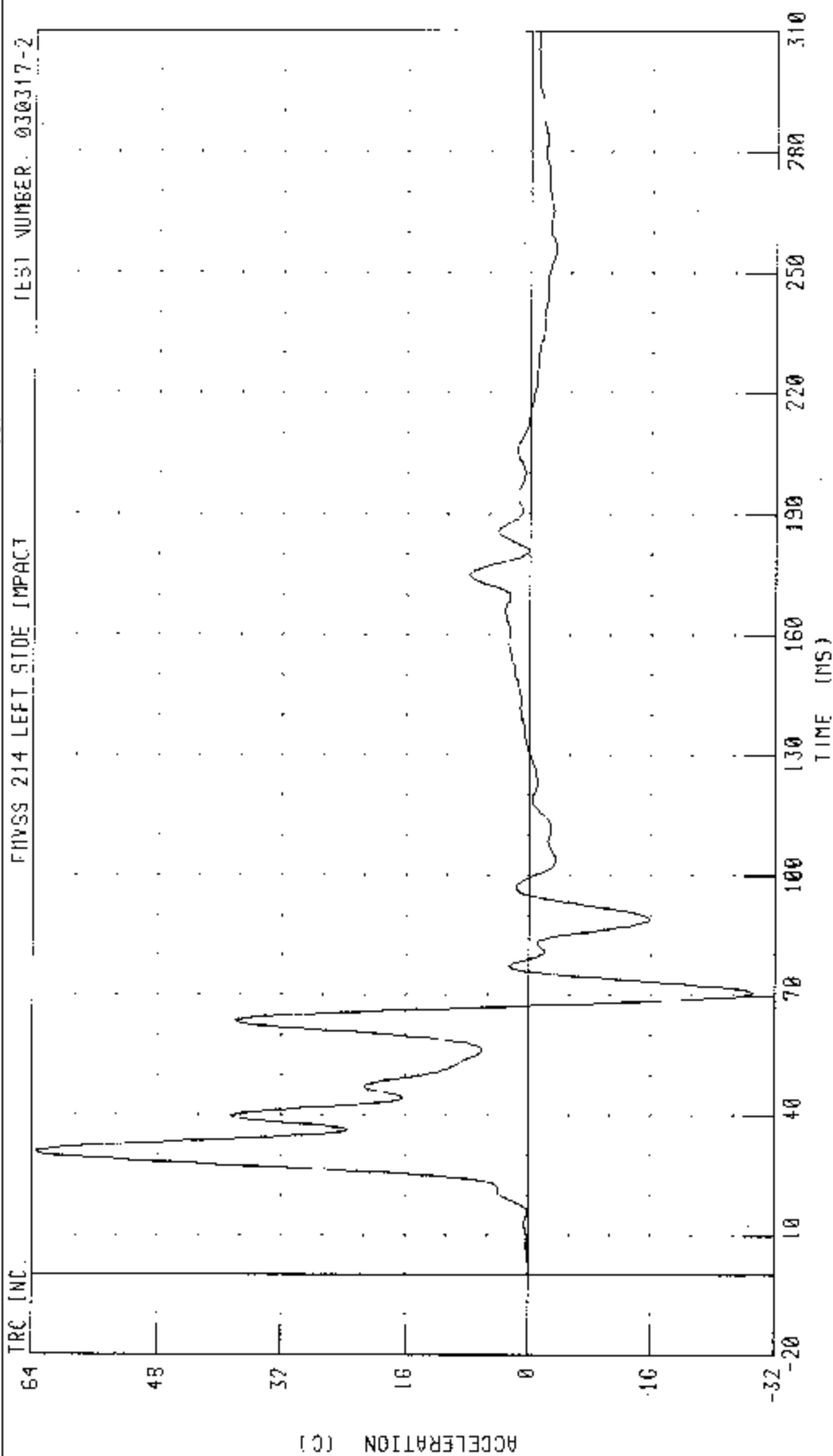


55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER: INIT LEFT SIDE OF 2003 YAZDA B  
LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION



Driver and Passenger Dummy Instrumentation Plots  
Acceleration Data - FIR Filtered - Redundant

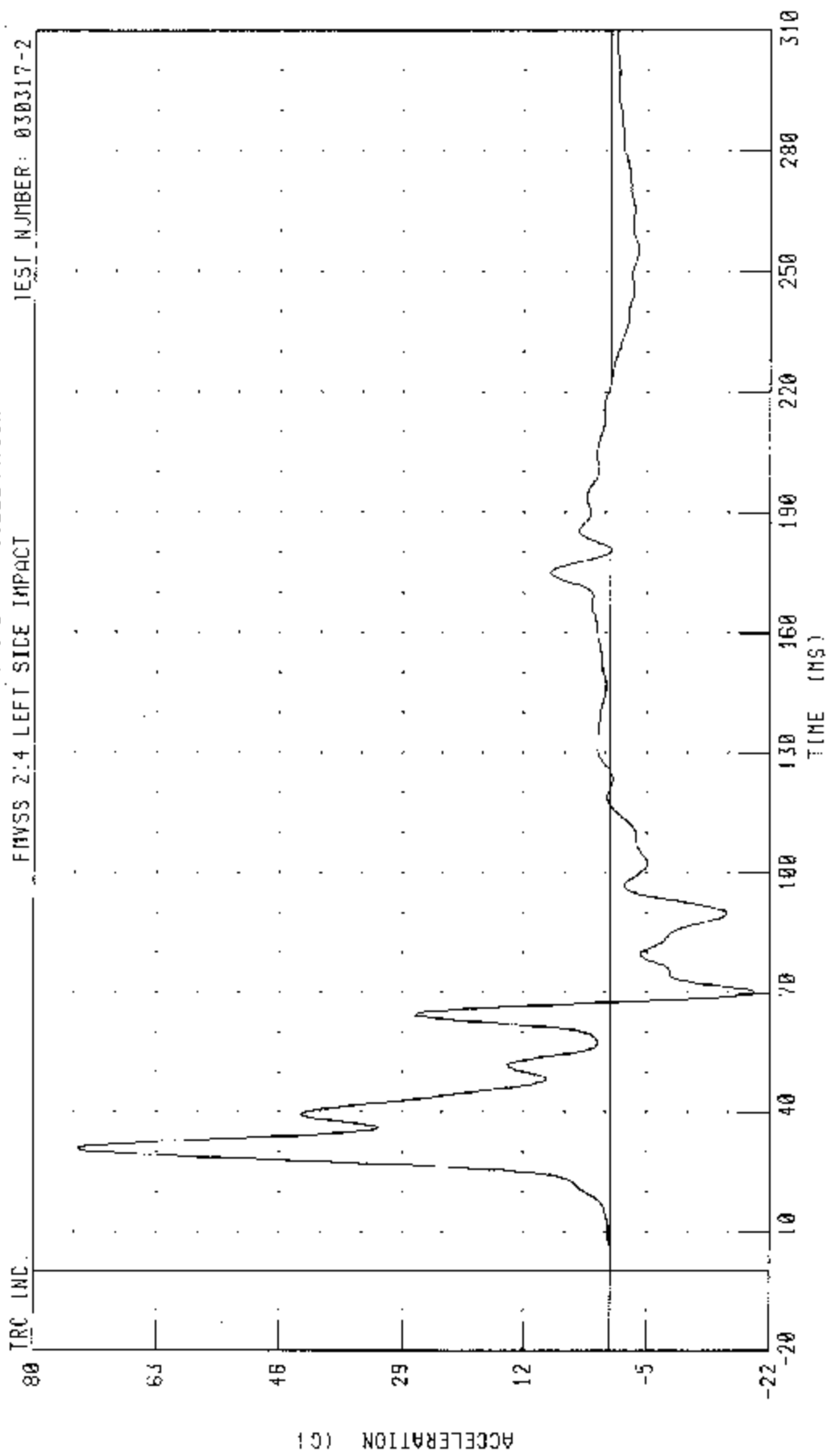
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 3  
 DRIVER UPPER 313 Y-AXIS REDUNDANT ACCELERATION



CHANNEL: LURVR1 FILTER: FIR 100

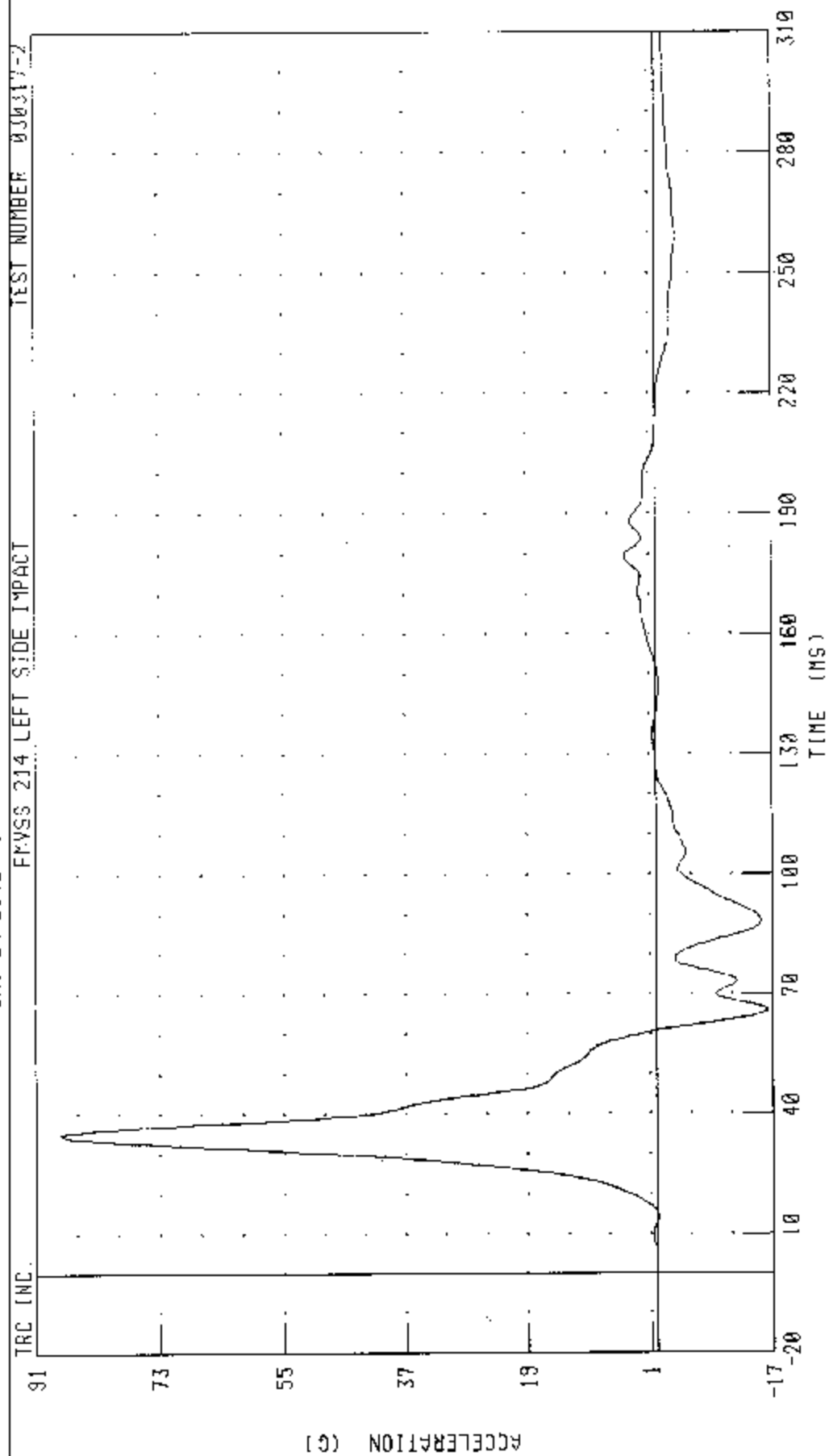
PEAK DATA: 63.47 G @ 51.25 MS; -29.13 G @ 70.63 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION



CHANNEL: LLRYR1 FILTER: FIR 100 PEAK DATA: 73.71 G @ 31.25 MS; -20.14 G @ 70.00 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
 DRIVER LOWER SPINE Y AXIS REDUNDANT ACCELERATION



CHANNEL: T12YR1 FILTER: FIR 100

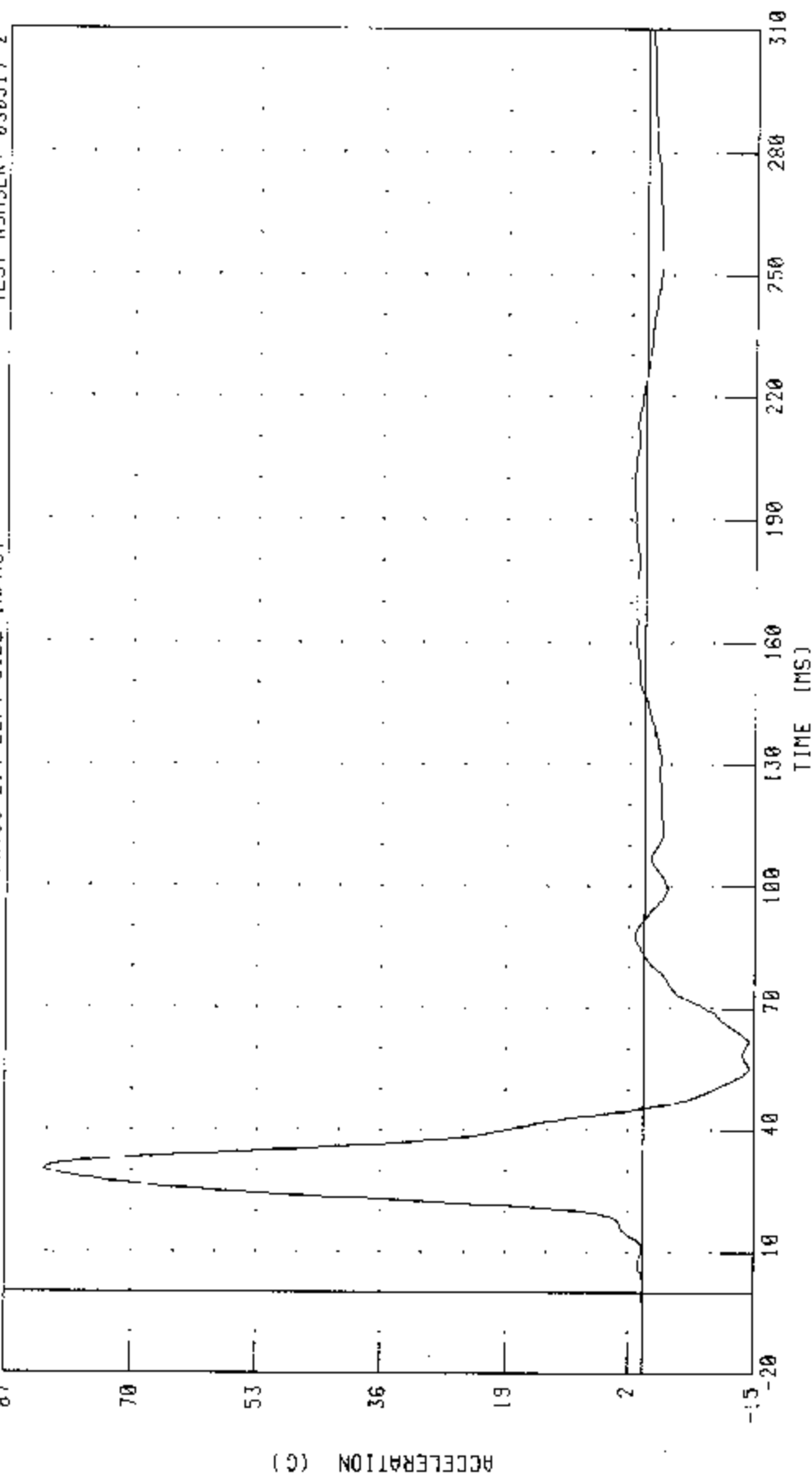
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA R

DRIVER PELVIS Y-AXIS REDUNDANT ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

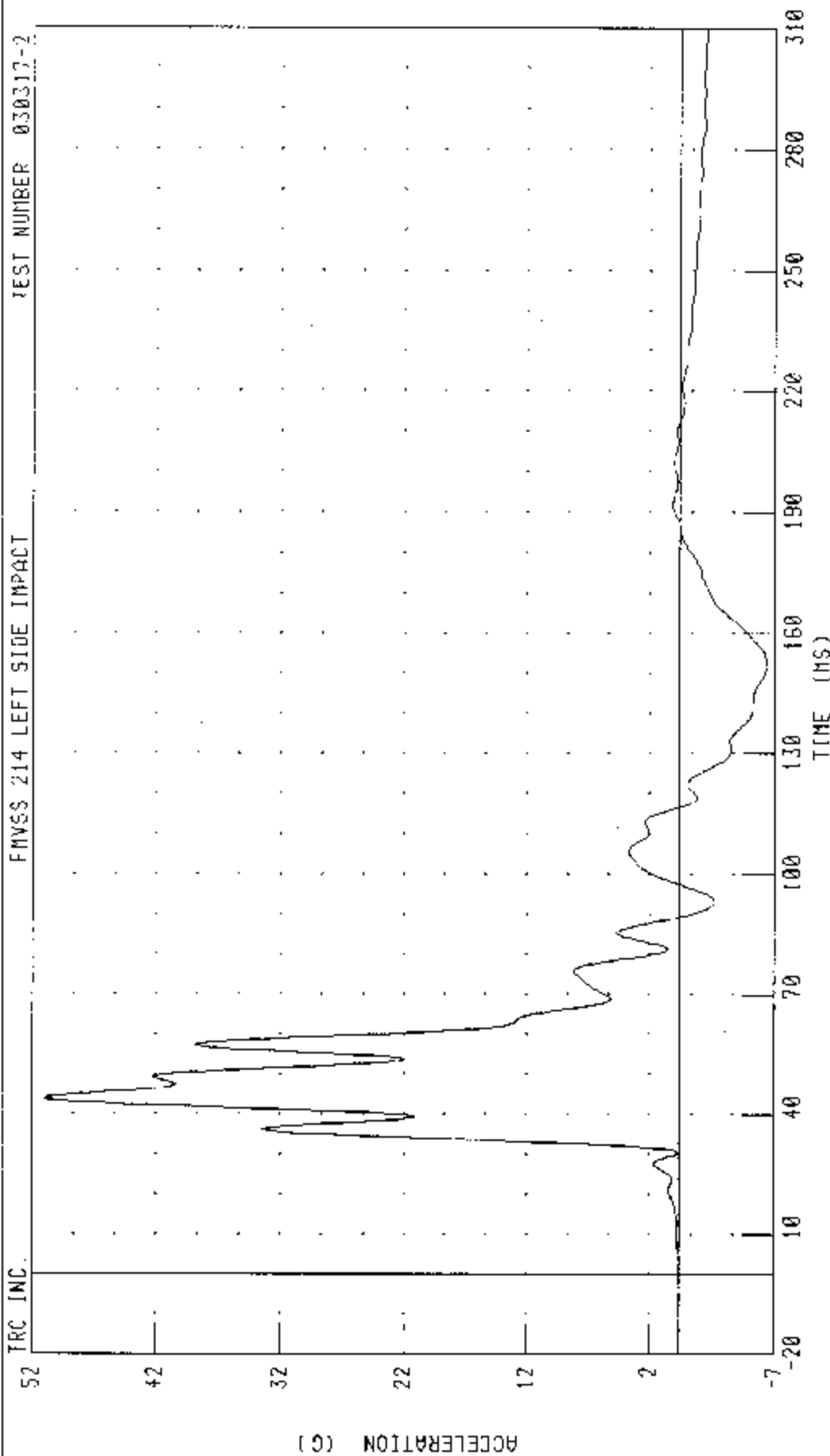
TEST NUMBER: 030317-2



CHANNEL: PEVYR1 FILTER: FIR 100

PEAK DATA 81 75 G @ 30 62 MS, -14.27 G @ 55 63 MS

55/28 KPH 90 GFORCE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6  
LEFT RFAR PASSENGER UPPER RIB Y AXIS REDUNDANT ACCELERATION



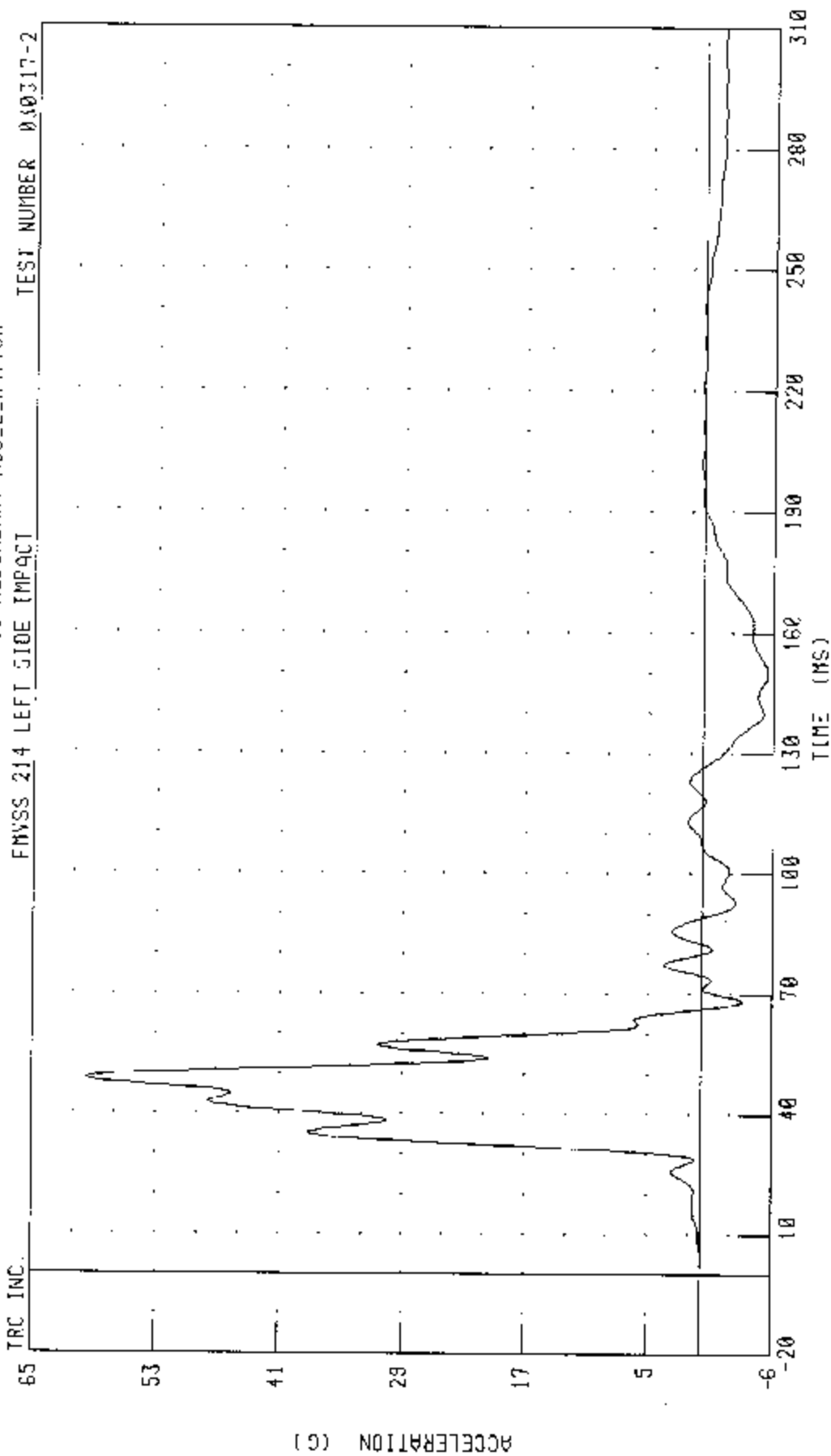
CHANNEL: LURYR4 FILTER: FIR 100

PEAK DATA 51.28 G @ 43.75 MS; -6.97 G @ 152.50 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER: INTO LEFT SIDE OF 2003 MAZDA 6  
LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

TRC INC.

TEST NUMBER 030317-2



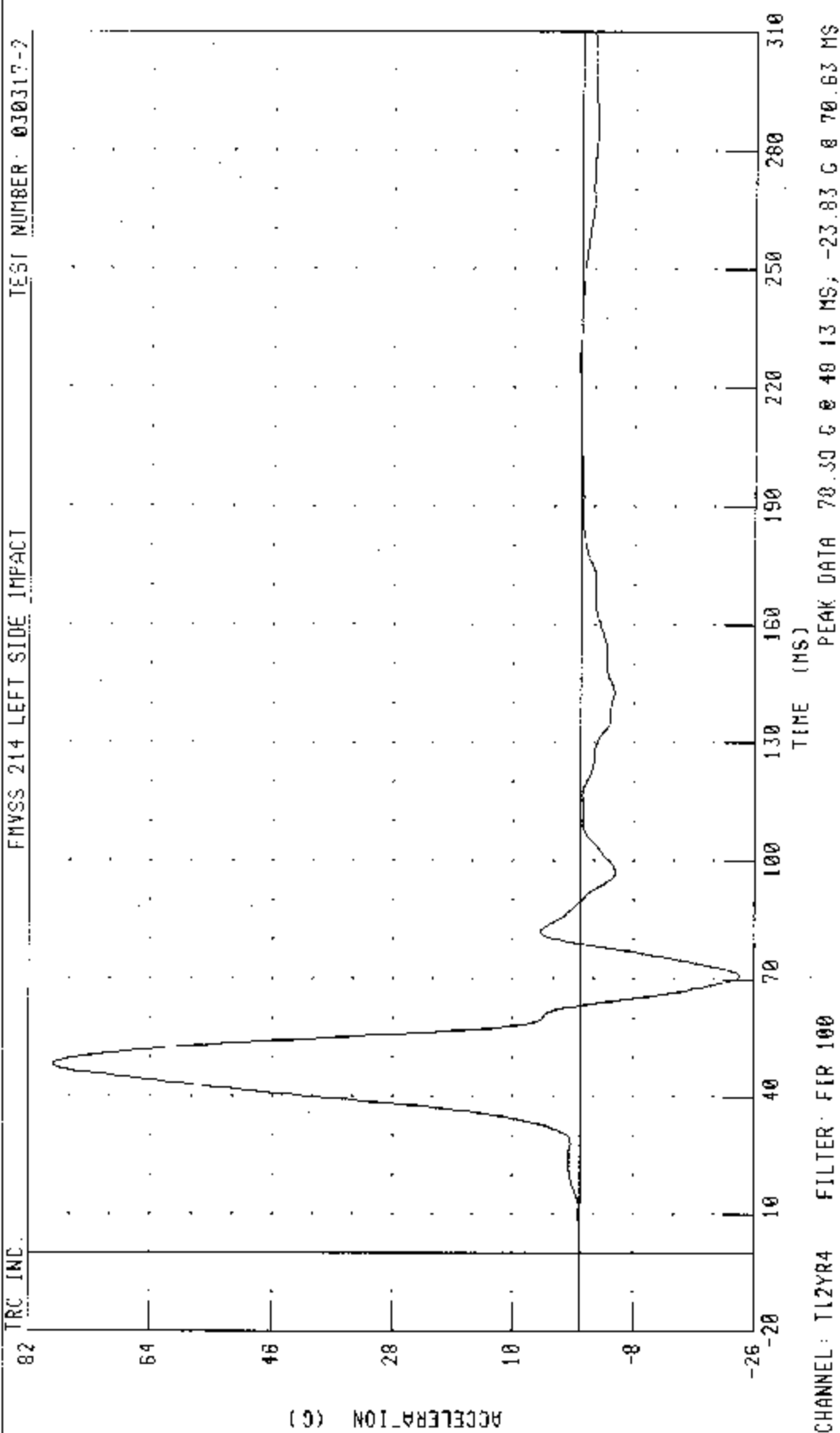
TIME (MS)

CHANNEL: LLRYR4 FILTER: FIR 100

PEAK DATA: 59.99 G @ 48.75 MS, -6.24 G @ 150.00 MS



55/28 KPH 90 DEGREE SIDE IMPACT (MOVING OFFROAD RAMP) INTO LEFT SIDE OF 2003 MAZDA 6  
LEFT REAR PASSENGER LOWER SPINE Y AXIS REDUNDANT ACCELERATION



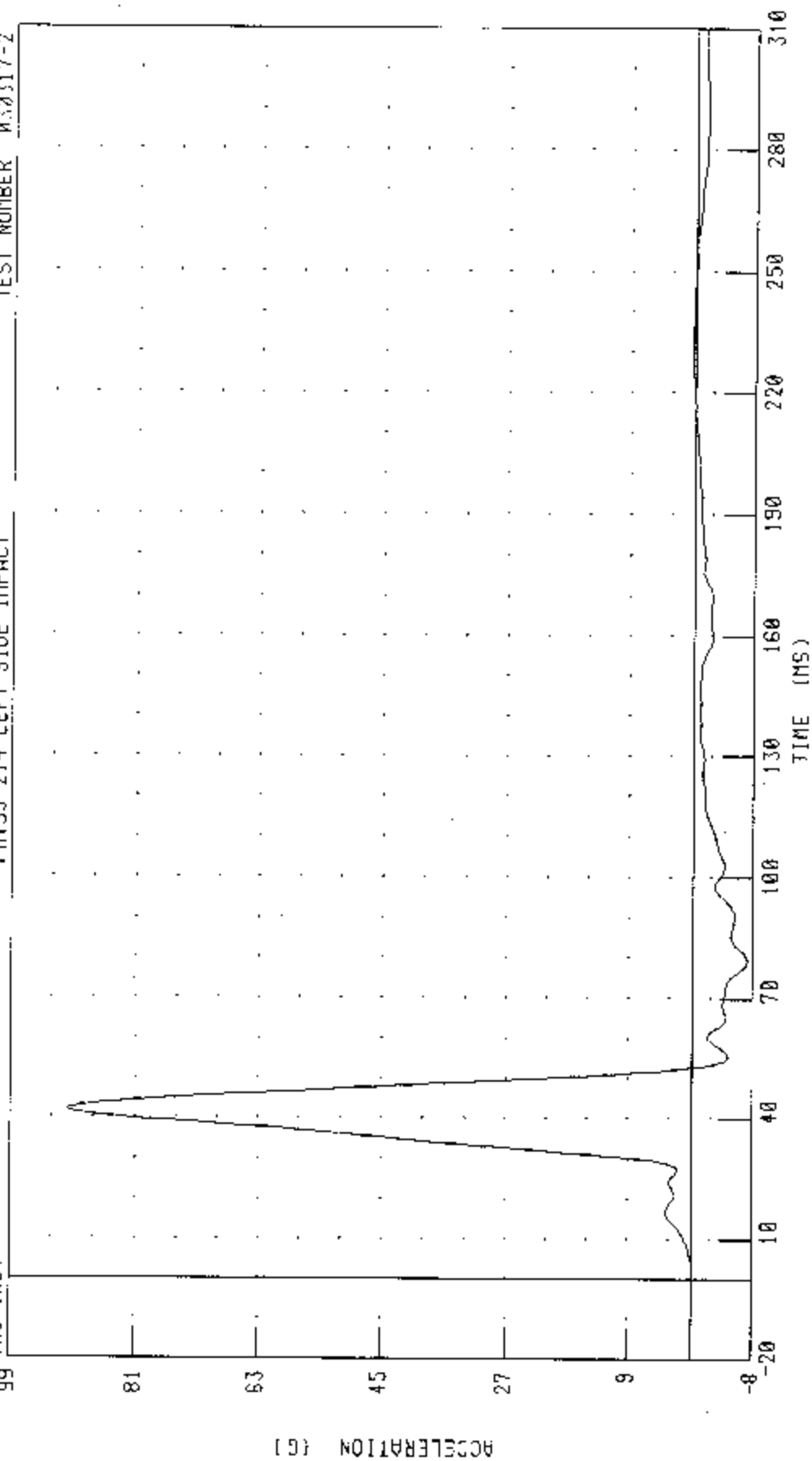
55/23 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MAZDA 6

LEFT REAR PASSENGER PELVIS Y-AXIS REDUNDANT ACCELERATION

TRC INC.

PHYSS 214 LEFT SIDE IMPACT

TEST NUMBER 030317-2



CHANNEL: PEVYR4 FILTER: FIR 100

PEAK DATA 01.03 G @ 41.87 MS, -7.92 G @ 79.38 MS

## Appendix C

### SID Configuration and Performance Verification Data

Summary  
SID Pre-Test and Post-Test Calibration  
Configured For Left Side Impact

Date: March 5 - 24, 2003 TRC Inc. Test Number: 028C02/C03; 065C05/C06  
Laboratory Technician: Jack Willeke

Test Parameter	Specification	SID 28		SID 65	
		Pre-Test	Post-Test	Pre-Test	Post-Test
SH - Seated Height (mm)	889-909	900	898	899	897
RH - Rib Height (mm)	502-520	504	506	512	511
HP - Hip Pivot Height (mm)	99 ref	99.1	99.1	99.1	99.1
RD - Rib from Back Line (mm)	229-241	236	235	237	236
KH - Knee Pivot from Back Line (mm)	511-526	514	513	513	514
KV - Knee Pivot to Floor (mm)	490-505	497	499	499	497
HW - Hip Width (mm)	356-391	375	374	372	373
Thorax Impacts					
Temperature (°C)	18.9-25.5	21.7	21.7	21.7	21.7
Relative Humidity (%)	10-70	29	46	44	47
Probe Speed (m/s)	4.27-4.33	4.28	4.27	4.28	4.3
Upper Rib (g's)	37-46	39.1	39.2	40.7	40.9
Lower Rib (g's)	37-46	37.3	38.5	39.8	38.6
Lower Spine (g's)	15-22	16.5	17.4	19.4	19.2
Pelvis Impacts					
Temperature (°C)	18.9-25.5	21.7	21.7	21.7	21.7
Relative Humidity (%)	10-70	29	46	44	47
Probe Speed (m/s)	4.27-4.33	4.28	4.28	4.28	4.3
Pelvis (g's)	40-60	48.4	45.5	52.1	56.3

Calibration Test Results

Pre-Test

SID: 028

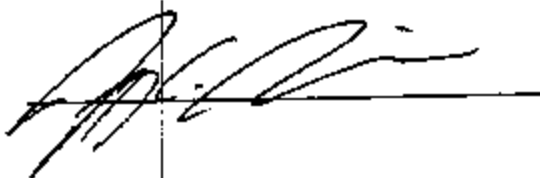
Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Thoracic Shock Absorber Test:	The thorax passed all shock absorber requirements (tested on February 3, 2003, for a previous calibration series).
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.

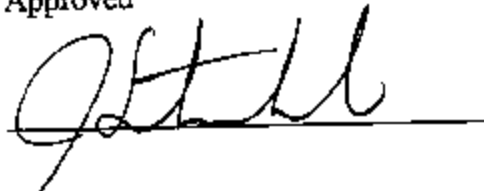
**Transportation Research Center Inc.**  
**572F SID Dummy**  
**External Dimensions**  
**Serial No. 028 Calibration No. 02**

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	900 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	504 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	236 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	514 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	497 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	375 mm	Yes
Top Rib Width From CVL	RW-1	165.1 - 180.3 mm	172 mm	Yes
Bottom Rib Width From CVL	RW-2	165.1 - 180.3 mm	172 mm	Yes
Difference Between Top & Bottom Rib Width from CVL		<= 2.5 mm	0.0 mm	Yes

Technician



Approved




## TRANSPORTATION RESEARCH CENTER INC.

## LATERAL HEAD DROP TEST

HYBRIDI III SID DUMMY

05-MAR-03

## LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. HDL02802

H3/SID SN028 HEAD DROP CAL02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.67 deg. C
RELATIVE HUMIDITY	10 - 70 %	33.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	145.12 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	-11.14 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 030503.1259;1

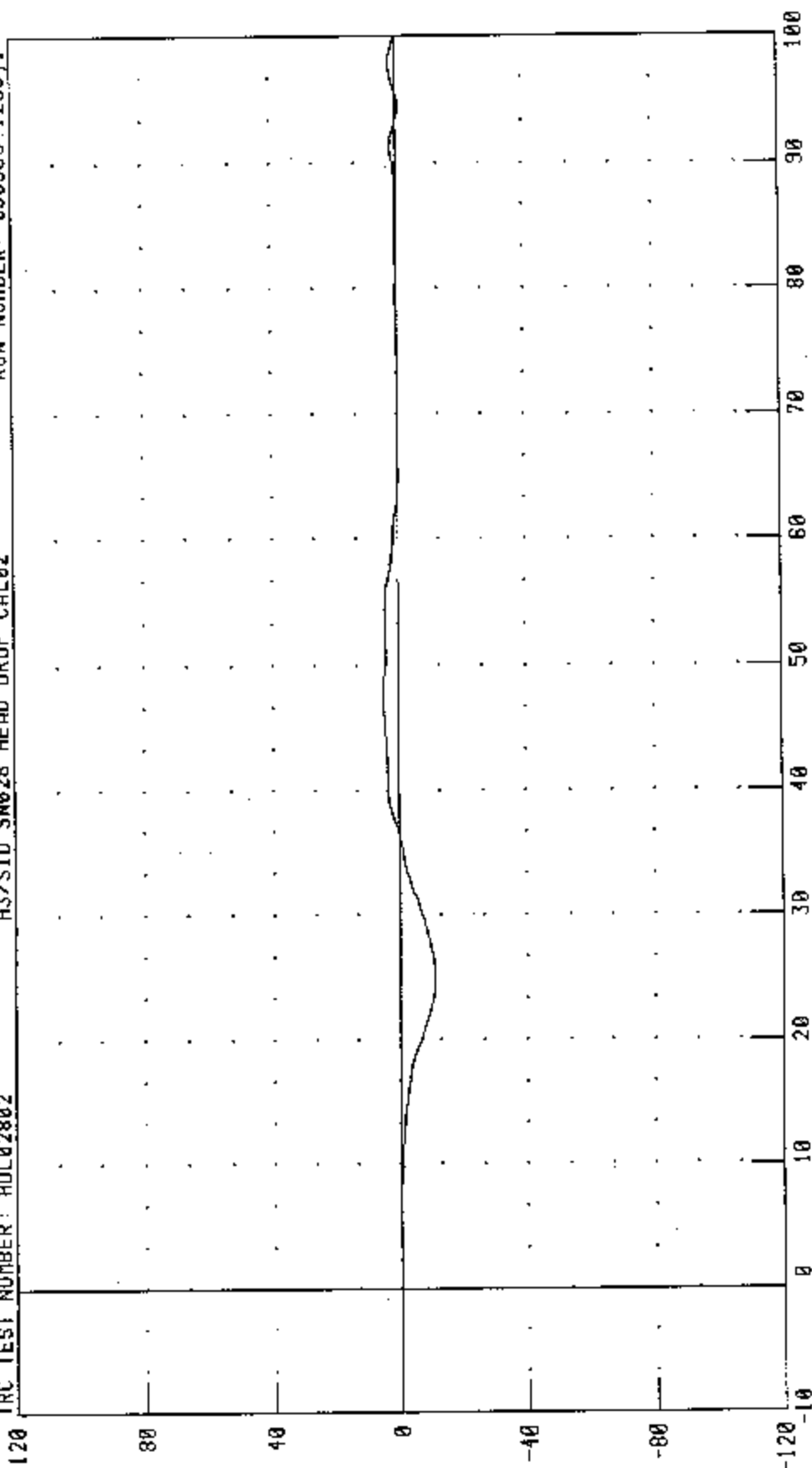
# BJ0510 DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: HDL02802

H3/S10 SN028 HEAD DROP CAL02

RUN NUMBER: 030503.1259.1



ACCELERATION (G)

TIME (MS X 10<sup>-1</sup>)

CHANNEL: HEDXC FILTER: CH. CLASS 1000

PEAK DATA: 4.77 G @ 4.72 MS, -11.14 G @ 2.48 MS



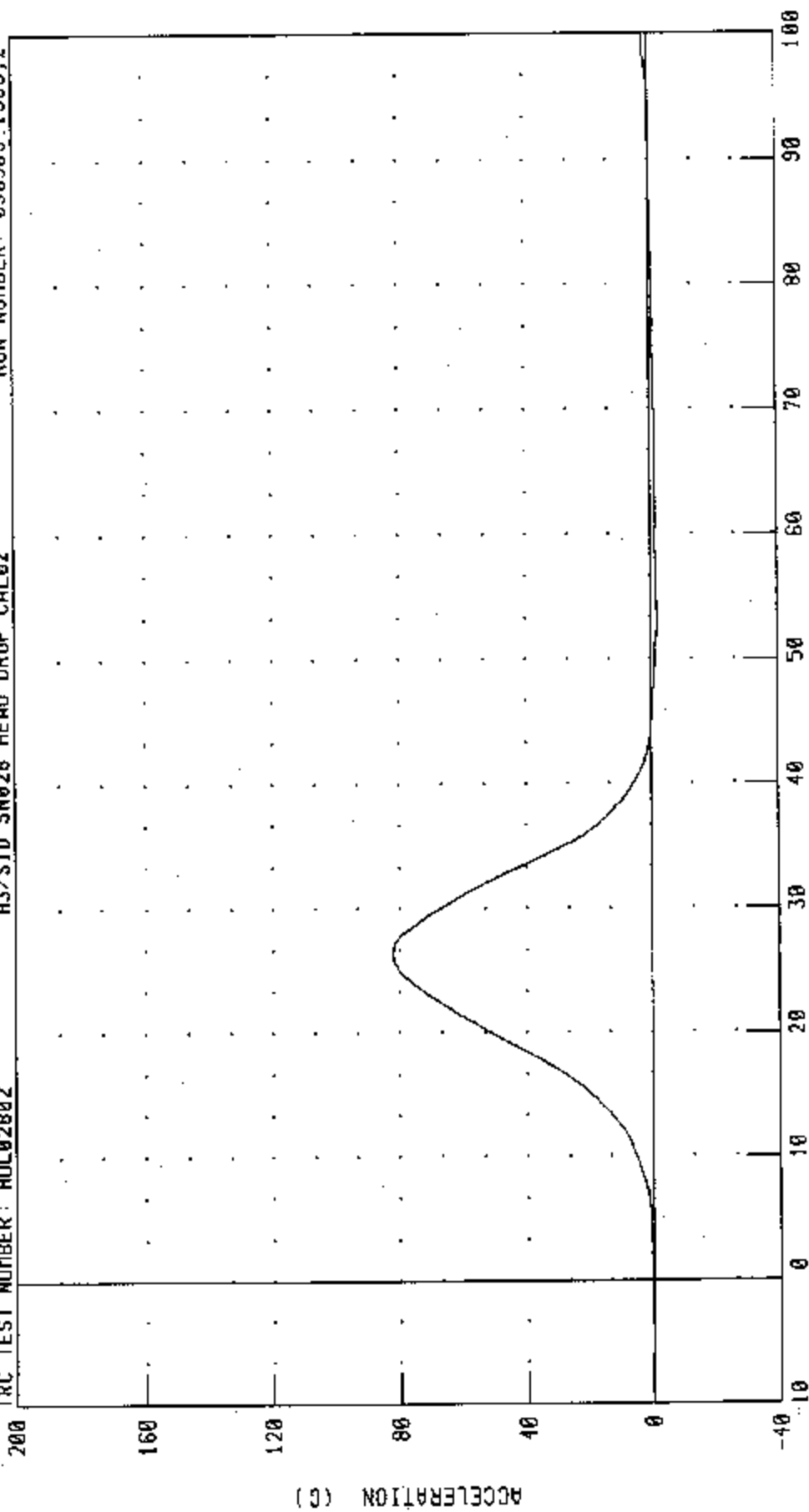
# BIOSID DUNNY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Y AXIS

RUN NUMBER: 030503.1306;2

TRC TEST NUMBER: HOL02802

H3/SID SN020 HEAD DROP CAL02



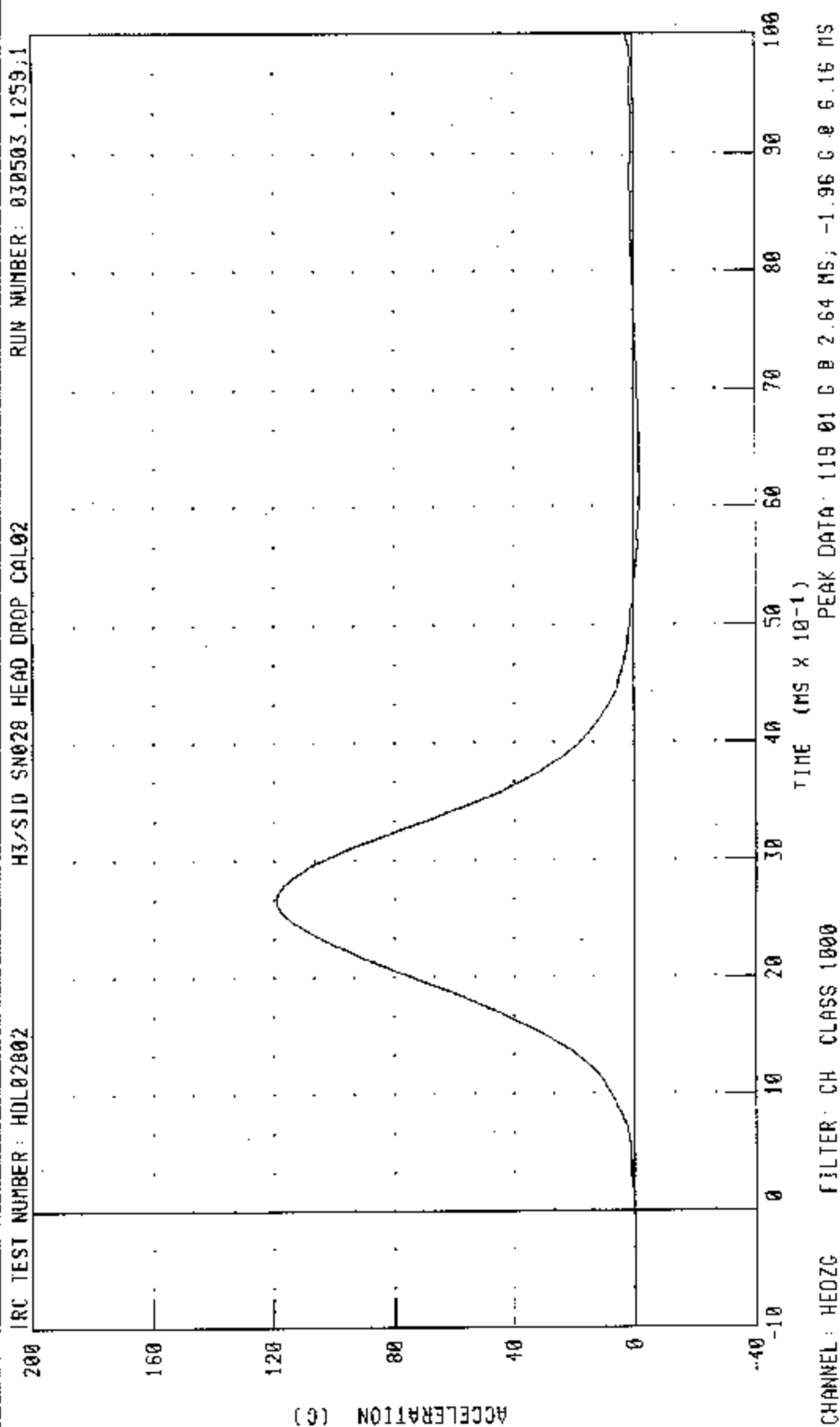
TIME (MS X 10<sup>-1</sup>)

PEAK DATA: 82.35 C 0 2.64 MS, -2.35 C 0 5.36 MS

CHANNEL: HEDYC FILTER: CH. CLASS 1000

# BIOSID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Z AXIS



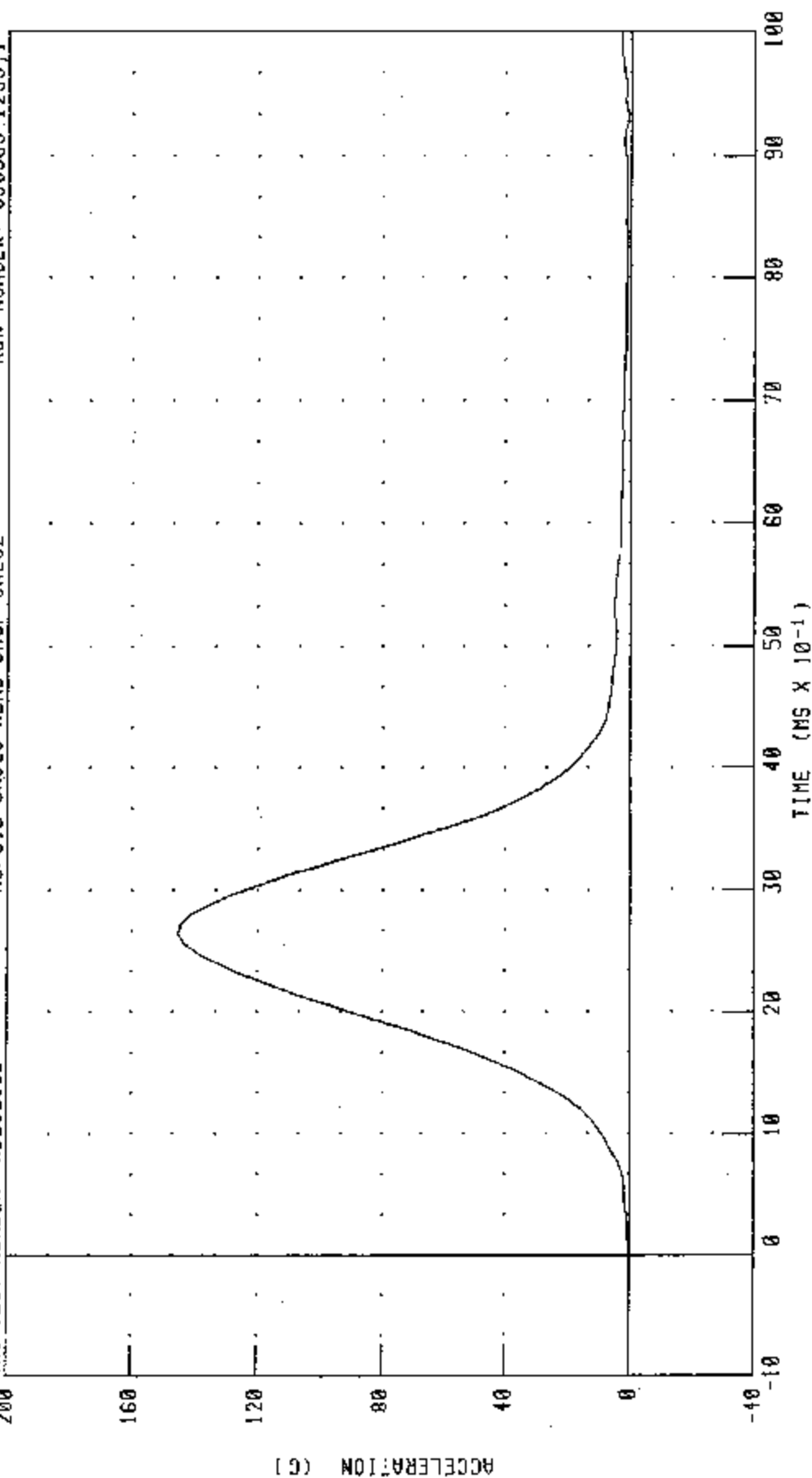
# BIOSID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: HDL02802

H3/SID SN028 HEAD DROP CAL02

RUN NUMBER: 030503.1259.1



CHANNEL: HEDRC FILTER: CH. CLASS 1000

PEAK DATA: 145.12 G @ 2.64 MS; 0.15 G @ -0.96 MS

## TRANSPORTATION RESEARCH CENTER INC.

## LATERAL NECK TEST

HYBRIDIII SID DUMMY

05-MAR-03

## LEFT SIDE CONFIGURATION

TRC INC.

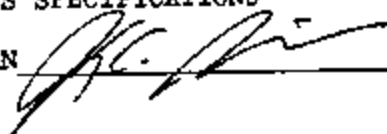
TEST NO. NFL02802A

H3/SID SN028 NECK LEFT CAL02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 - 22.2 deg. C	21.67 deg. C
RELATIVE HUMIDITY	10 - 70 %	30.00 %
IMPACT VELOCITY	6.89 - 7.13 M/S	7.06 M/S
INTEGRATED VELOCITY	10 MS   1.96 - 2.55 M/S	2.42 M/S
	20 MS   4.12 - 5.10 M/S	4.73 M/S
	30 MS   5.73 - 7.01 M/S	6.69 M/S
	40 - 70 MS   6.27 - 7.64 M/S	7.18 - 7.28 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION	66 - 82 deg.	70.80 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO	58 - 67 MS	58.40 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE	73 - 88 NM	83.25 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO	49 - 64 MS	51.52 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT	2 - 16 MS	8.32 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN

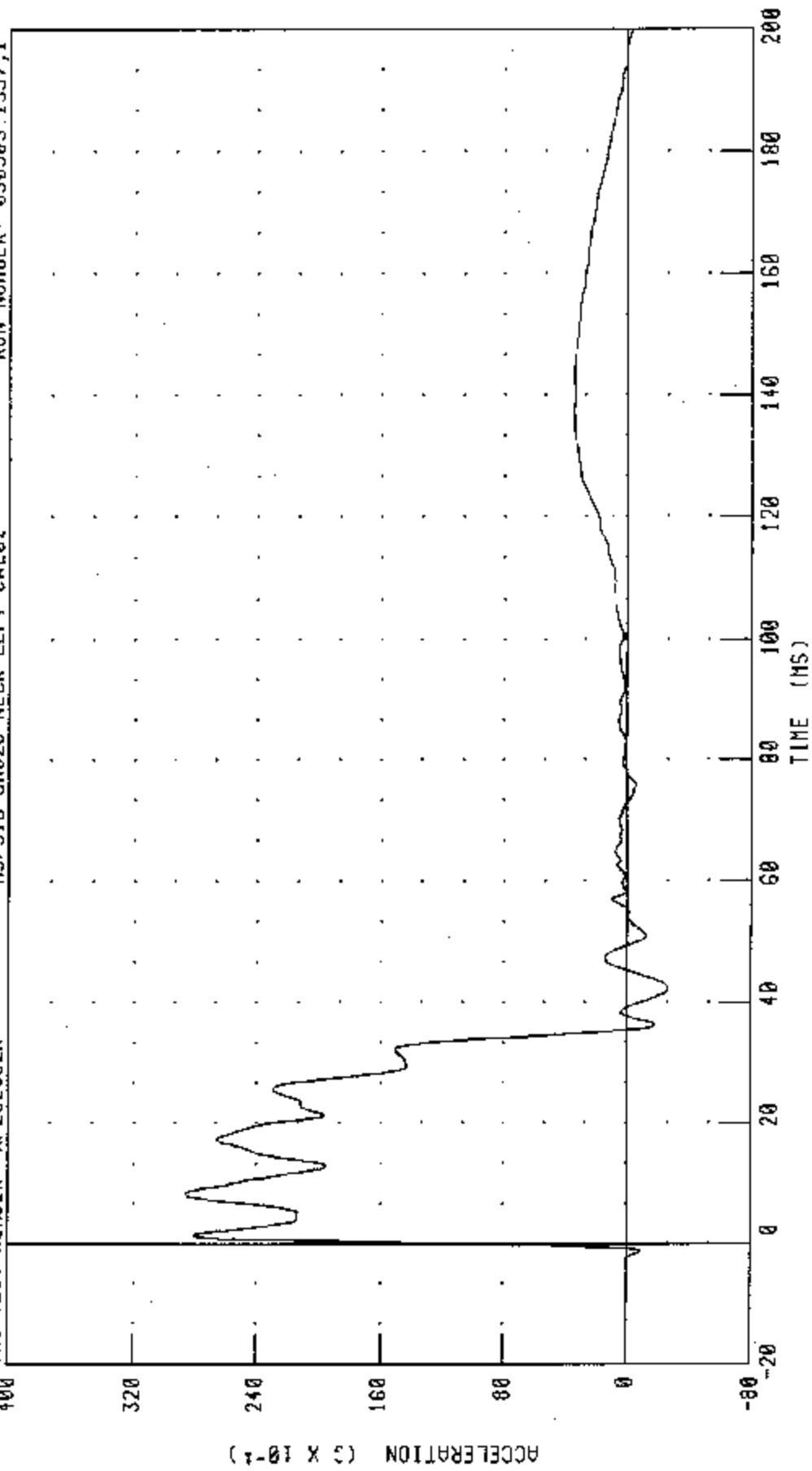


RUN NUMBER: 030503.1337;1

# H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

PENDULUM DECELERATION

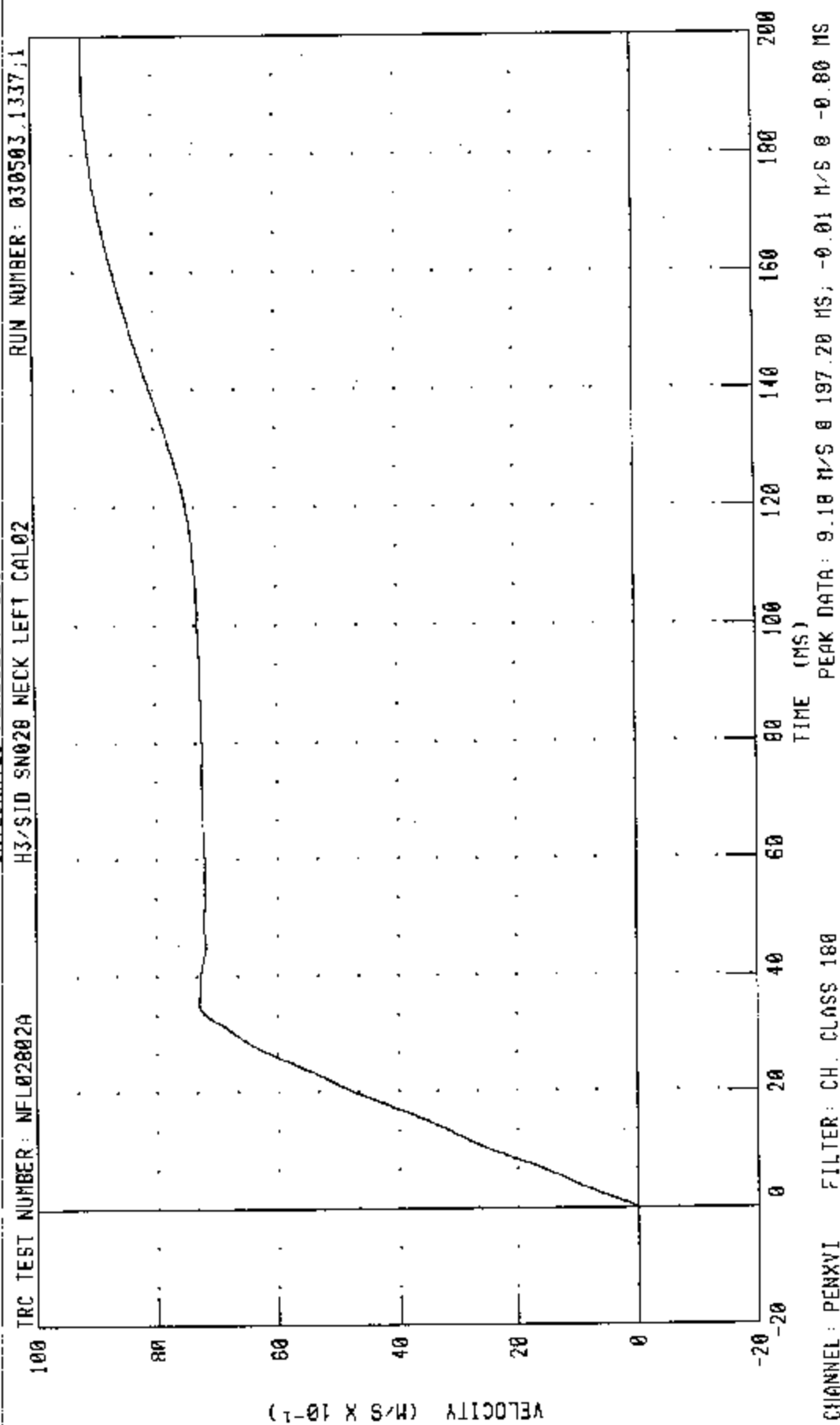
TRC TEST NUMBER: NFL02802A H3/SID SN028 NECK LEFT CAL02 RUN NUMBER: 030503.1337;1



PEAK DATA 28.64 G @ 8.48 MS; -2.65 G @ 42.32 MS

CHANNEL: PENXC FILTER: CH. CLASS 100

# H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST INTEGRATED PENDULUM VELOCITY



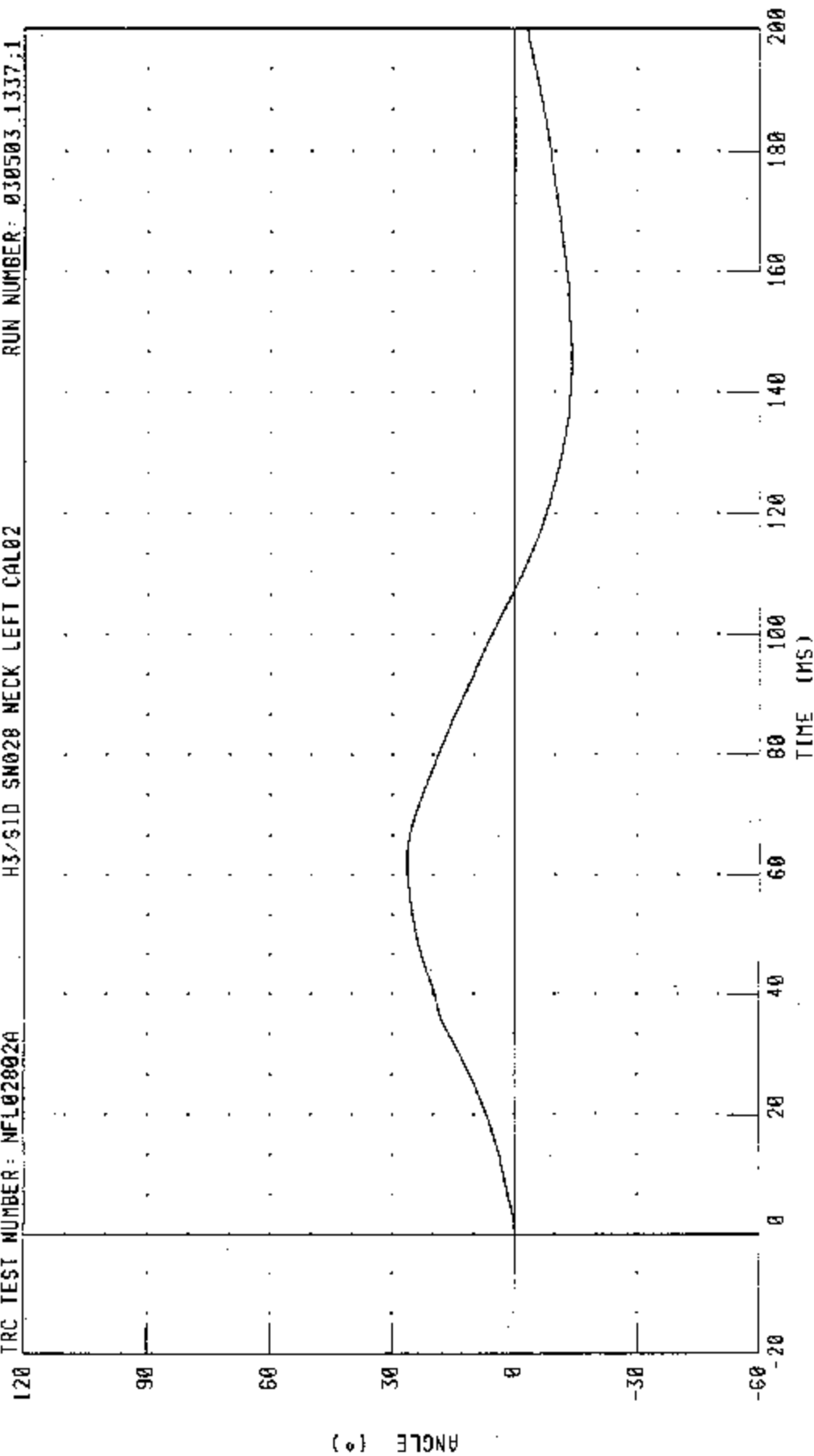
# H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: NFL02802A

H3/SID SN028 NECK LEFT CAL02

RUN NUMBER: 030503.1337.1



CHANNEL: BETA

FILTER: CH. CLASS 60

PEAK DATA: 26.34 ° @ 62.48 MS; -14.06 ° @ 145.44 MS

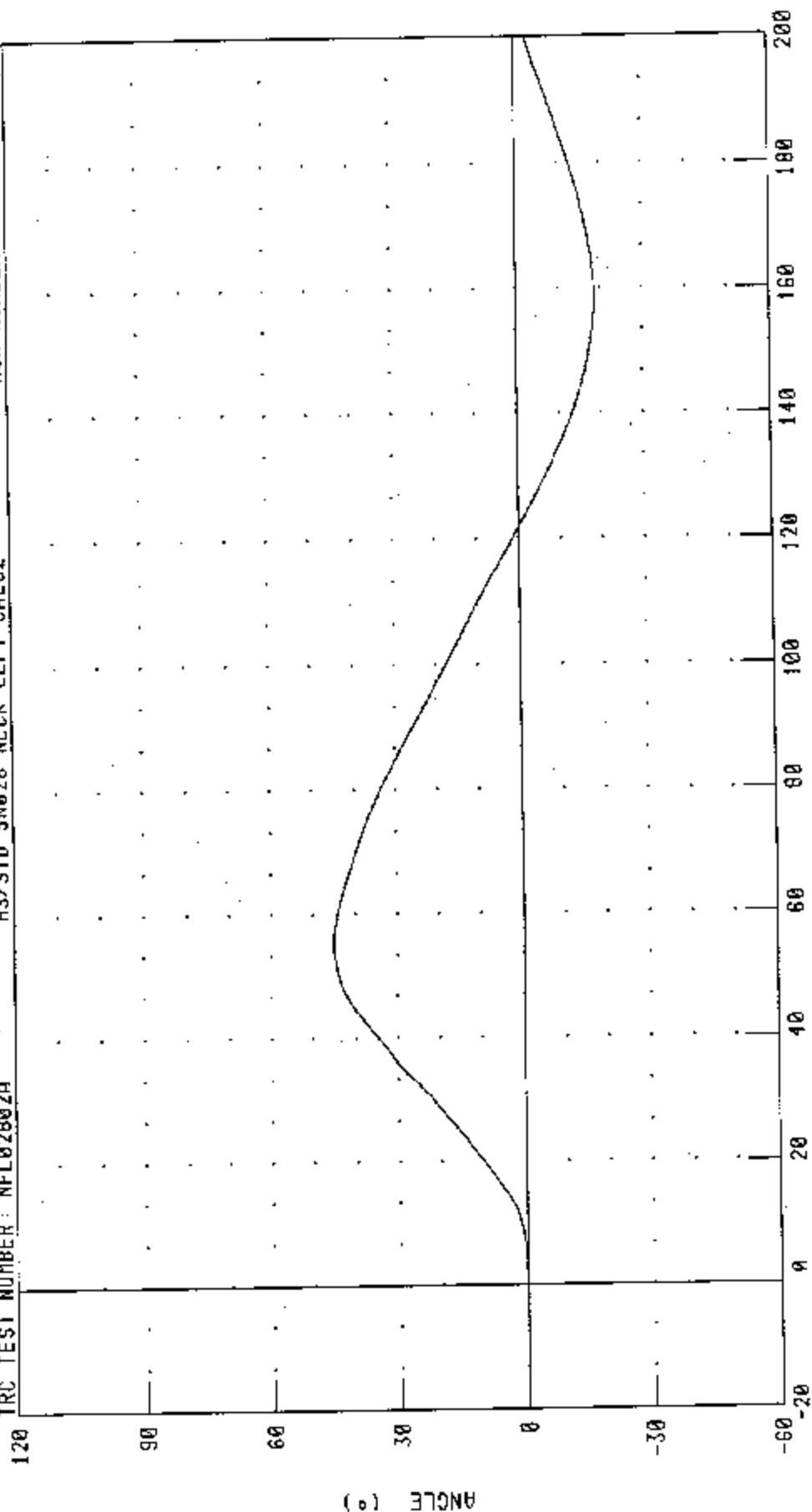
# H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT OCCIPITAL CONDYLE

RUN NUMBER: 030503.1337.1

TRC TEST NUMBER: NFL02802A

H3/SID SN028 NECK LEFT CAL02



PEAK DATA: 45.13 ° @ 55.44 MS, -18.87 ° @ 158.56 MS

CHANNEL: THETA FILTER: CH. CLASS 60



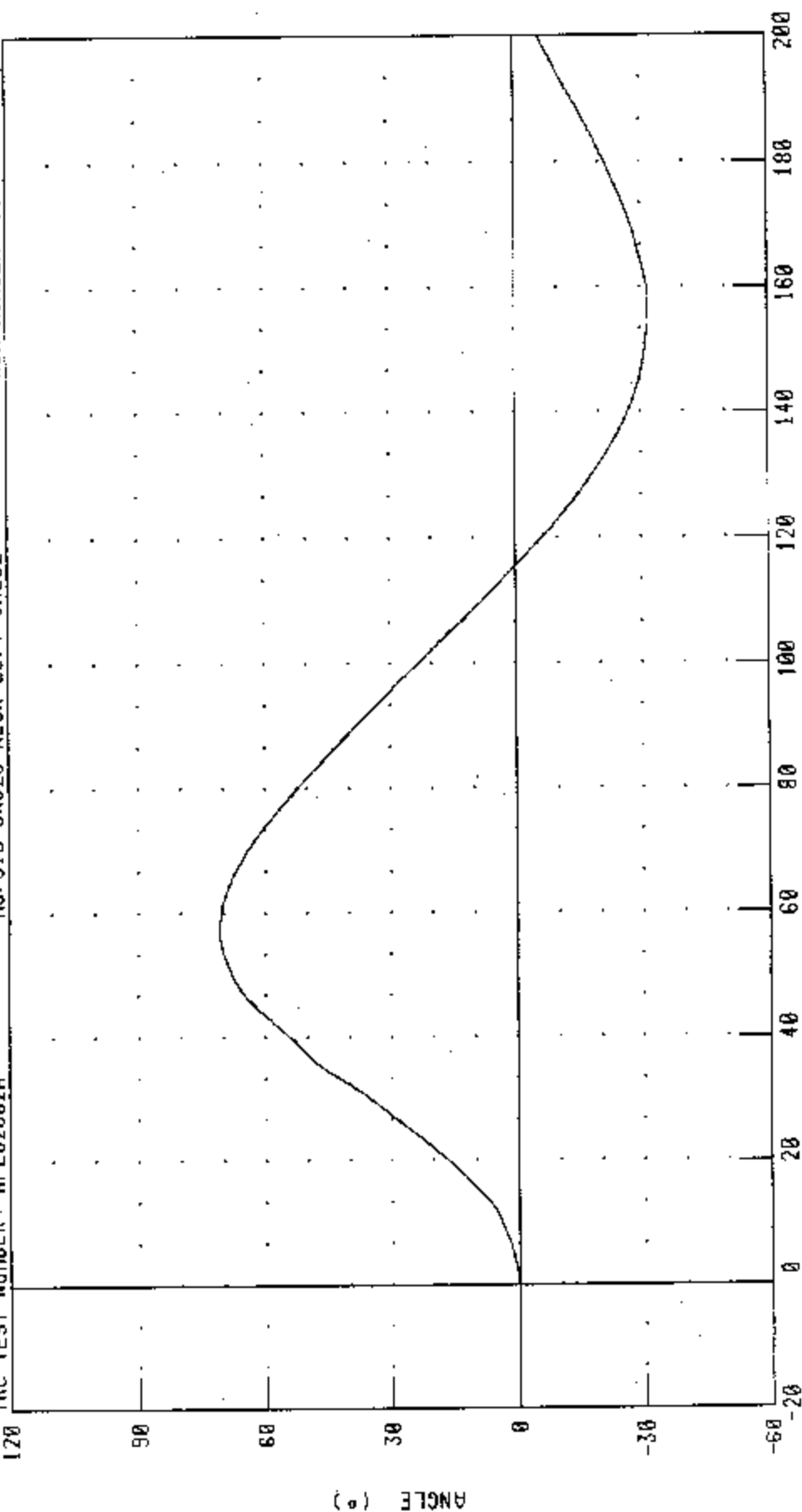
# H3/SID DUMMY CALIBRATION -- IFFT LATERAL NECK TEST

TOTAL ROTATION

TRC TEST NUMBER: NFL02802A

H3/SID SN028 NECK LEFT CAL02

RUN NUMBER: 030503.1337.1



TIME (MS)

PEAK DATA: 70.90 ° @ 57.20 MS; -31.95 ° @ 156.40 MS

CHANNEL TOTAL FILTER: CH CLASS 60

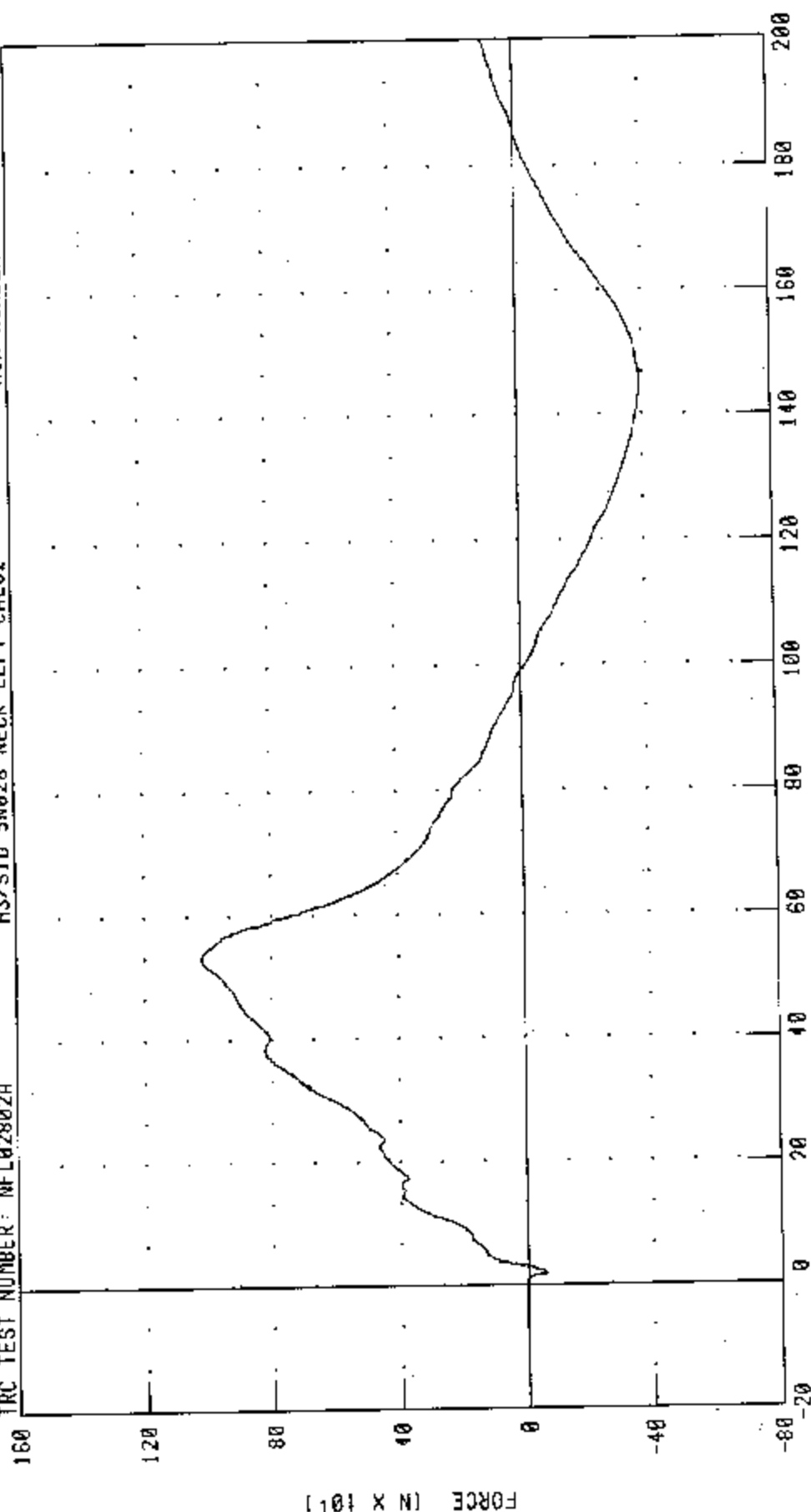
# 113/S10 DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK FORCE Y AXIS

RUN NUMBER: 030503.1337.1

H3/S10 SN028 NECK LEFT CAL02

TRC TEST NUMBER: NFL02802A



TIME (MS)

PEAK DATA: 1018.93 N @ 53.28 MS, -391.31 N @ 144.64 MS

CHANNEL: NEKYF FILTER: CH CLASS: 1000

FORCE (N X 10<sup>1</sup>)

# H3/S10 DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK MOMENT X AXIS

RUN NUMBER: 030503.1337.1

TRC TEST NUMBER: NFL02802A

H3/S10 SN028 NECK LEFT CAL02

160

120

80

40

0

-40

-80

TORQUE (N·M)

TIME (MS)

PEAK DATA: 66.64 N·M @ 48.32 MS, -22.97 N·M @ 11.20 MS

CHANNEL: NEKXN FILTER: CH. CLASS 600

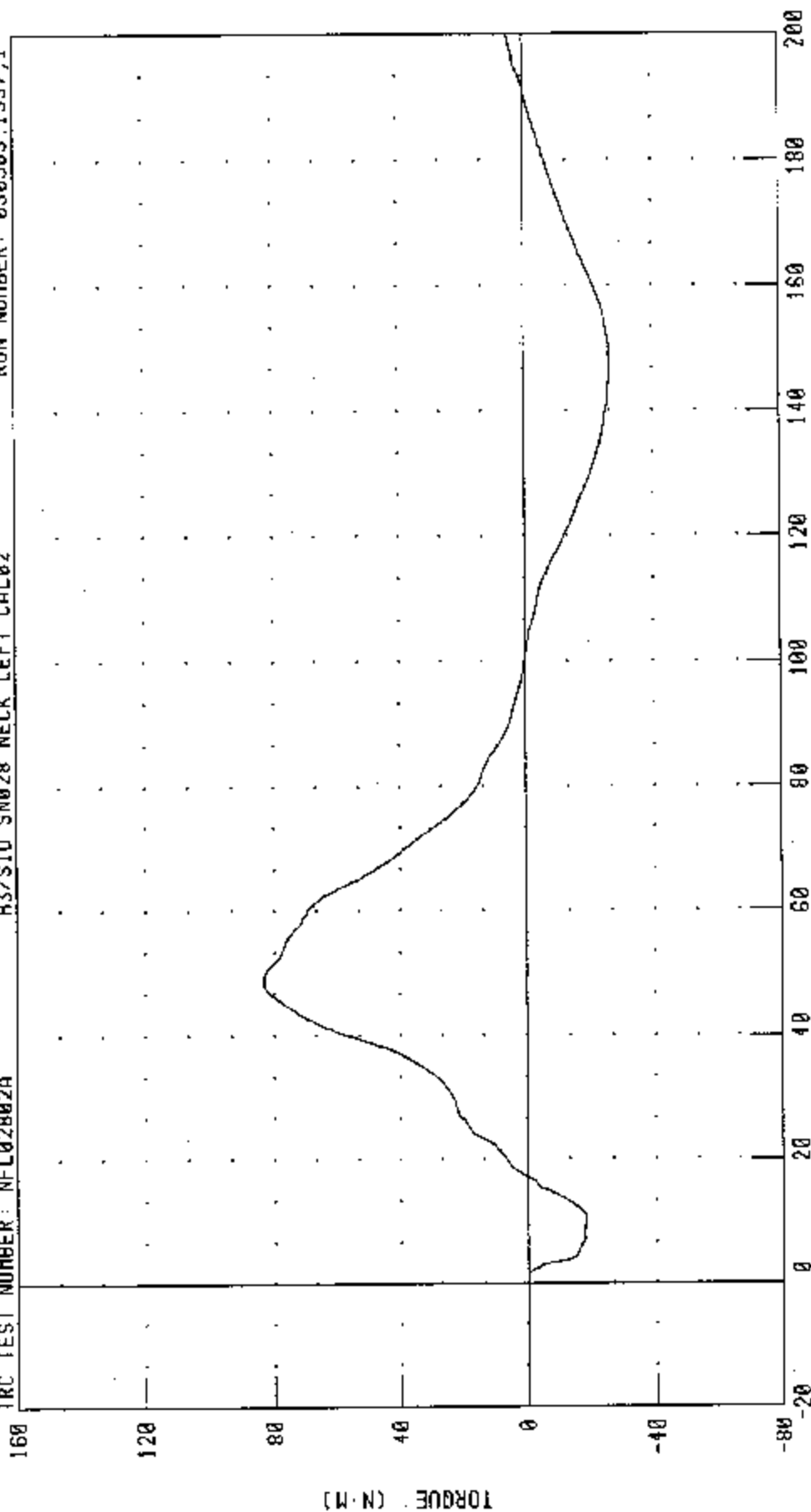
# H3/SID DUMMY CALIBRATION -- LEFT LATRAL NECK TEST

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

RUN NUMBER: 030503.1337.1

TRC TEST NUMBER: NFL02802A

H3/SID SN028 NECK LEFT CAL02



TIME (MS)

PEAK DATA: 83.25 N M @ 48.88 MS, -25.70 N M @ 148.48 MS

CHANNEL: NEKDM FILTER: CH CLASS 600

## TRANSPORTATION RESEARCH CENTER INC.

## LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

28-FEB-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: STL02802

572F SID SN028 L. THORAX CAL02

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	29.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.28 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	39.1 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	37.3 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	16.5 G

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 022803.1318;1

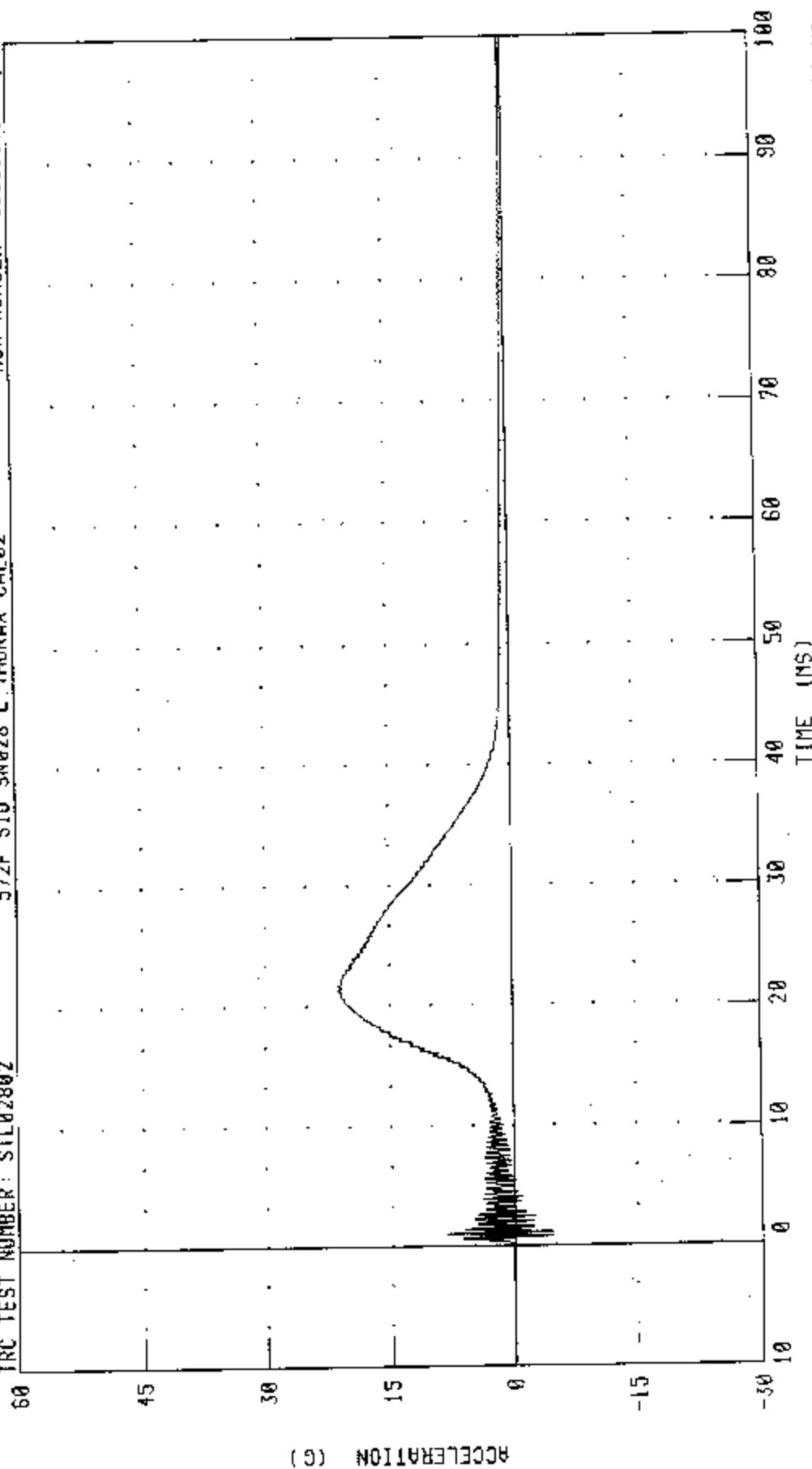
# PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

572F SID SN028 L THORAX CAL02

TRC TEST NUMBER: STL02802

RUN NUMBER: 030303 0850;1



PEAK DATA: 21.18 G @ 21.68 MS; -4.80 G @ 0.00 MS

CHANNEL: PENXC FILTER: CH CLASS 1000

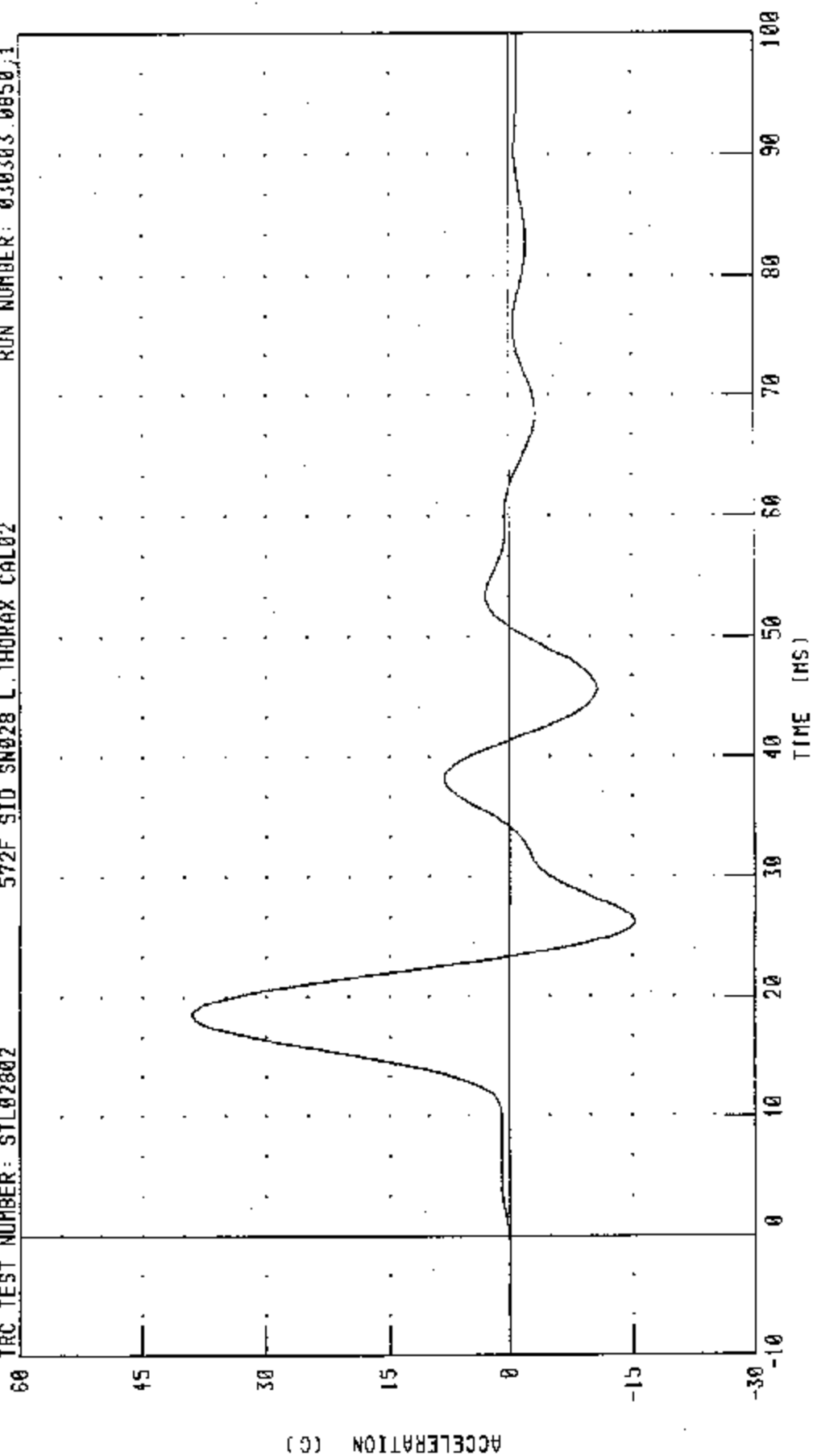
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT UPPER RIB ACCELERATION Y AXIS

RUN NUMBER: 030303.0050.1

TRC TEST NUMBER: STL02802

572F SID SN028 L THORAX CAL02



CHANNEL: LURYG FILTER FIR 100

PEAK DATA: 39.11 G @ 18.75 MS; -15.24 G @ 26.25 MS

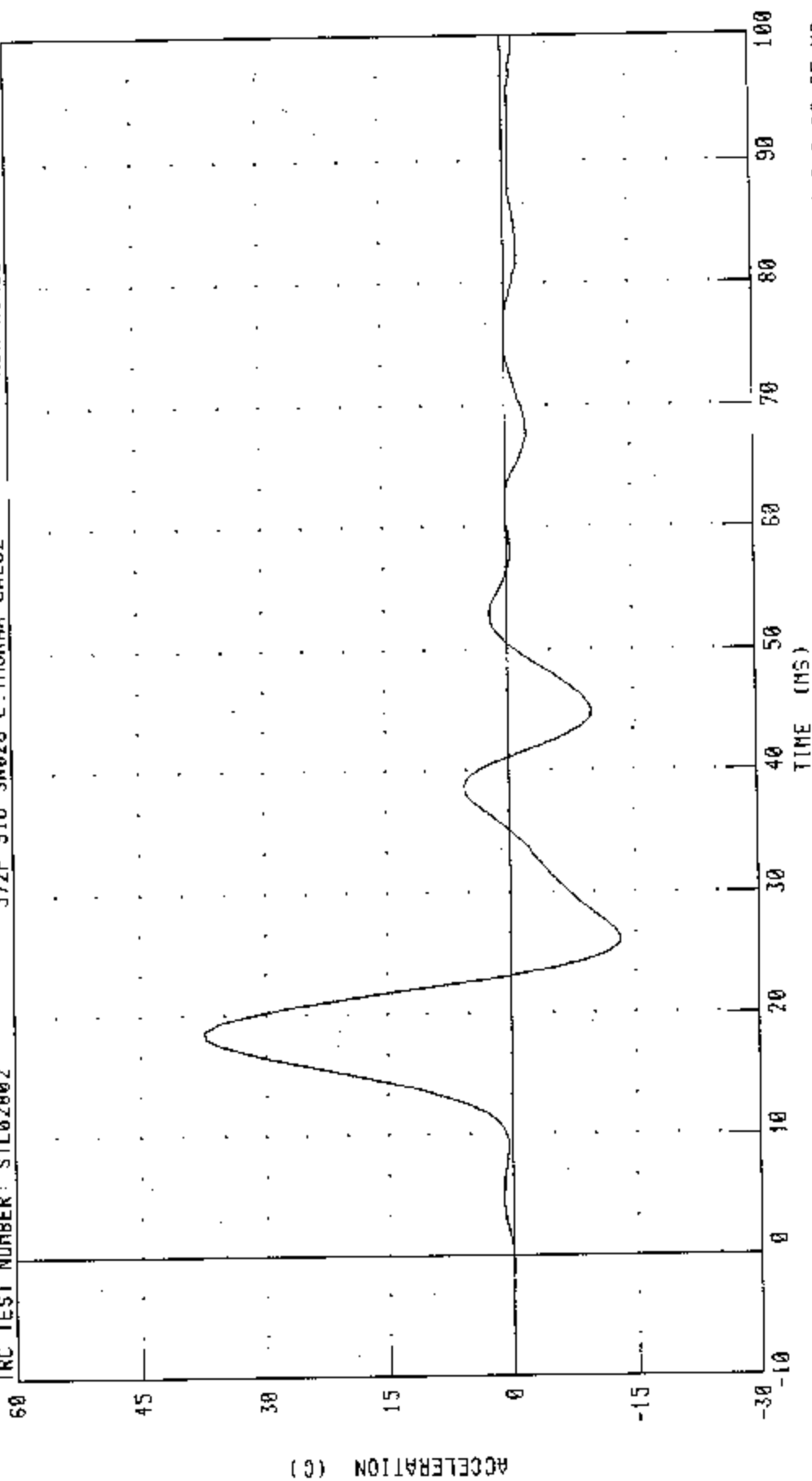
PART 572-F S.I.O. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT LOWER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL02802

572F SID SN028 L THORAX CAL02

RUN NUMBER: 030303 0850.1



CHANNEL: IIRYC FILTER: FIR 100

TIME (MS)

PEAK DATA: 37.29 G @ 18.75 MS; -13.11 G @ 26.25 MS



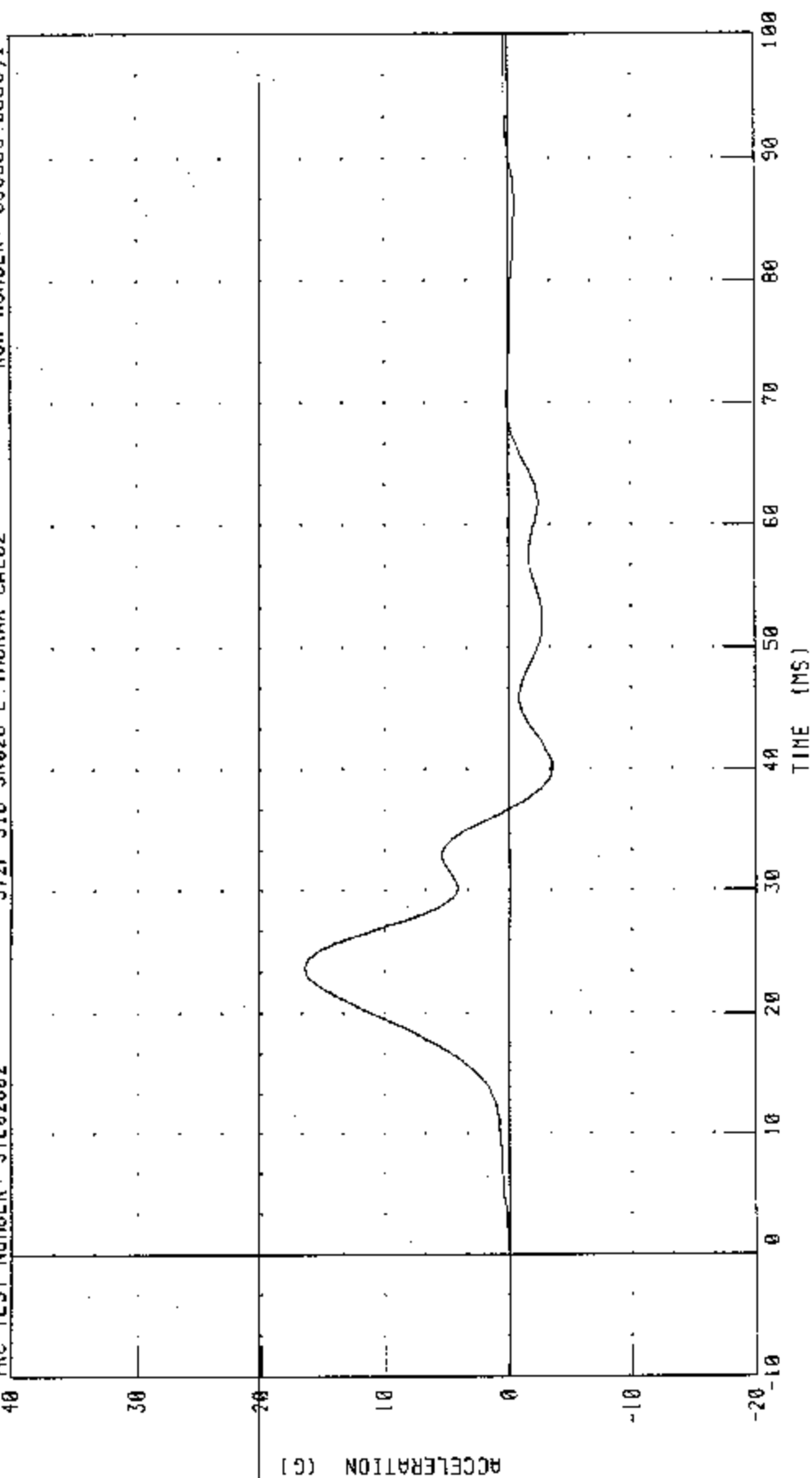
PART 572-F S.I.O. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

TRC TEST NUMBER: STL02802

572F SIO SN028 L THORAX CAL02

RUN NUMBER: 030303.0850,1



CHANNEL: 112YG FILTER: FIR 100

PEAK DATA: 16.46 G @ 23.75 MS, -3.53 G @ 40.00 MS

# Transportation Research Center Inc.

572B Abdomen Compression Test

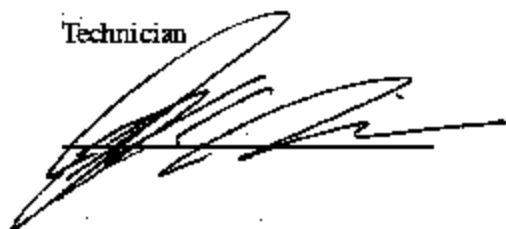
IIII SID Serial No. 028 Calibration No. 02 - 1

Test Date 03/05/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	6.4 - 8.1 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician



Approved

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03.06.2003 07:03:27 3

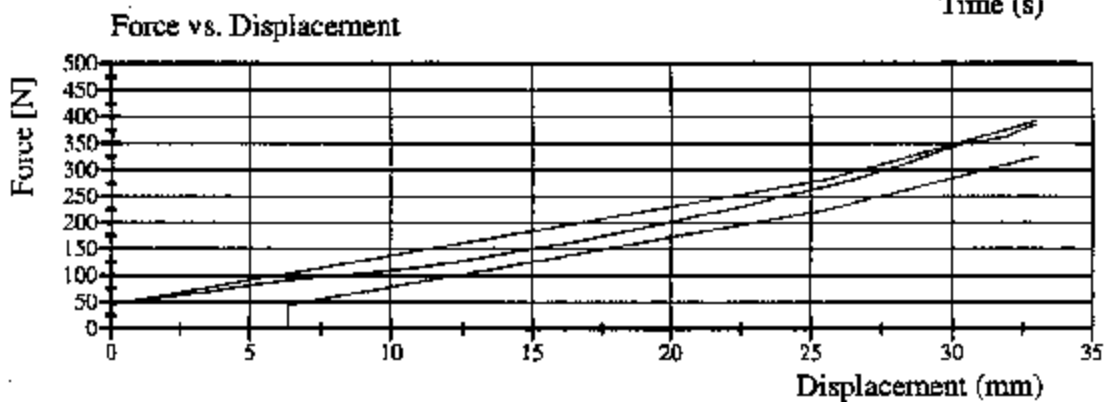
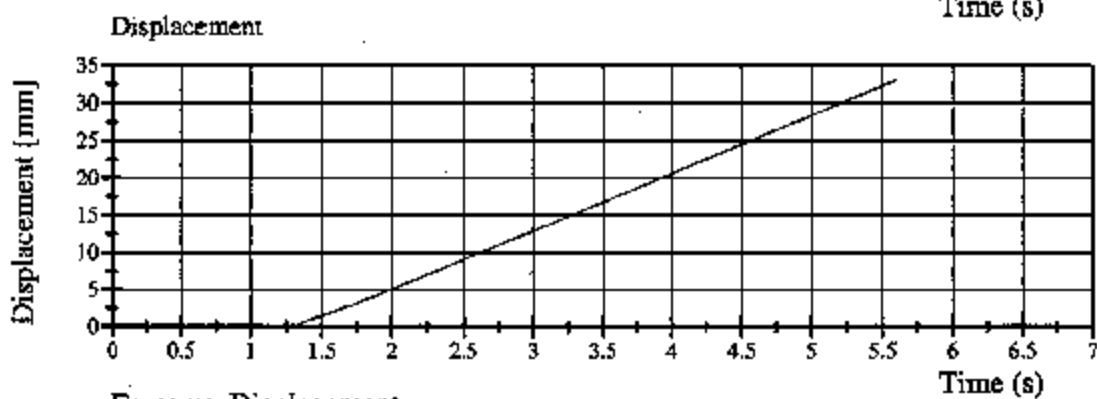
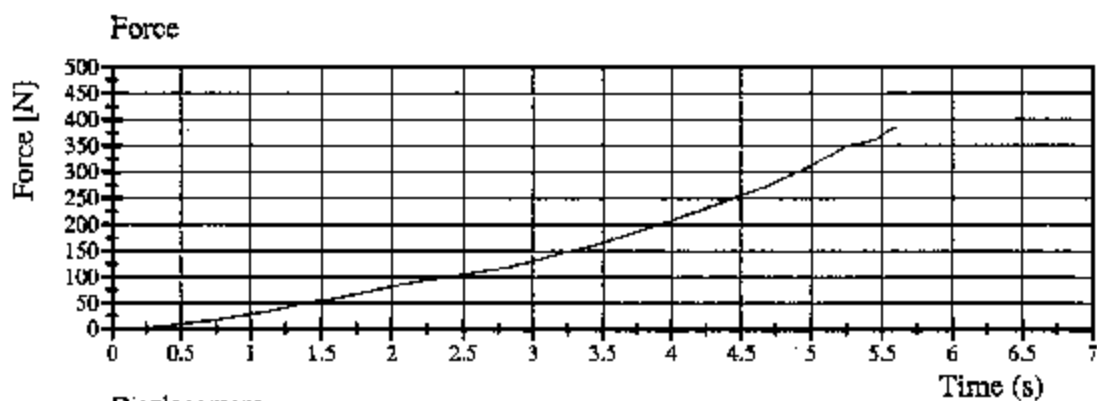


# Transportation Research Center Inc.

572B Abdomen Compression Test

HHH SID Serial No. 028 Calibration No. 02 - 1

Test Date 03/05/2003



03.06.2003 07:03:28 3



## TRANSPORTATION RESEARCH CENTER INC.

## THORACIC SHOCK ABSORBER TESTS

SIDE IMPACT DUMMY

03-FEB-03

TRC INC.

572F SN028 DAMPER TEST CAL01

TEST NUMBERS: DP02801A, DP02801B, DP02801C

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY		10 - 70 %	46.0 %
VELOCITY	FORCE	667 - 925 N	750 N
2.69 M/S	DISPLACEMENT	29.7 - 34.5 MM	29.9 MM
VELOCITY	FORCE	1733 - 2100 N	1791 N
4.26 M/S	DISPLACEMENT	31.6 - 37.2 MM	34.9 MM
VELOCITY	FORCE	3784 - 4495 N	4259 N
6.12 M/S	DISPLACEMENT	33.3 - 39.6 MM	37.8 MM

DAMPER SETTING = 5.6

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 020303.1116;2

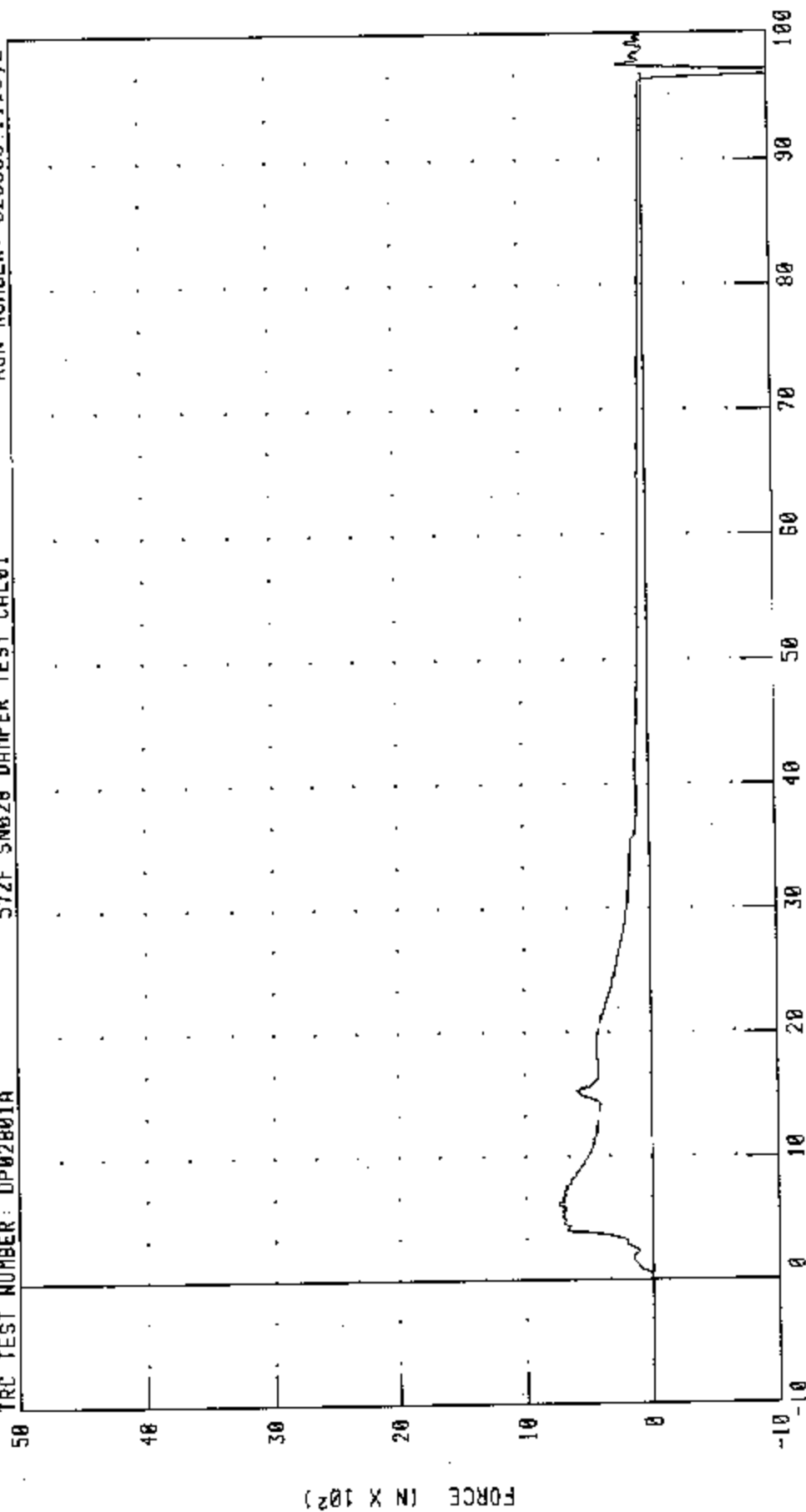
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 N/SEC)

SHOCK ABSORBER RESISTIVE FORCE

RUN NUMBER: 020303.1116;2

TRC TEST NUMBER: DP02B01A

572F SN020 DAMPER TEST CAL01



TIME (MS)

PEAK DATA: 749.74 N @ 6.16 MS; -1712.81 N @ 96.80 MS

CHANNEL: DAMPF FILTER: CH. CLASS 1000

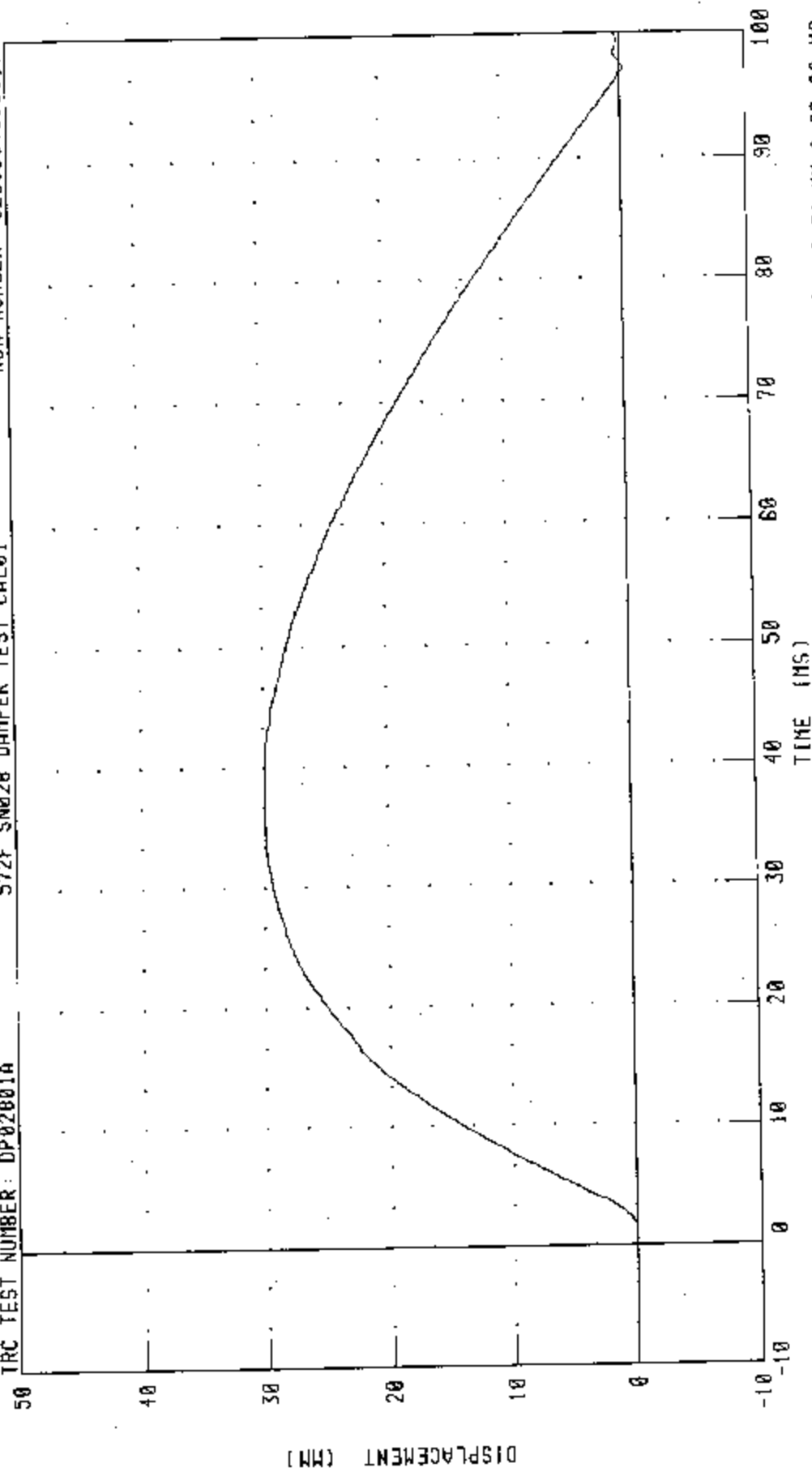
# PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER DISPLACEMENT

572F SN028 DAMPER TEST CAL01

TRC TEST NUMBER: DP02001A

RUN NUMBER: 020303.1116.2



CHANNEL: CSTYD FILTER: CH. CLASS 1000

PEAK DATA: 29.87 MM @ 35.20 MS, 0.31 MM @ 97.20 MS

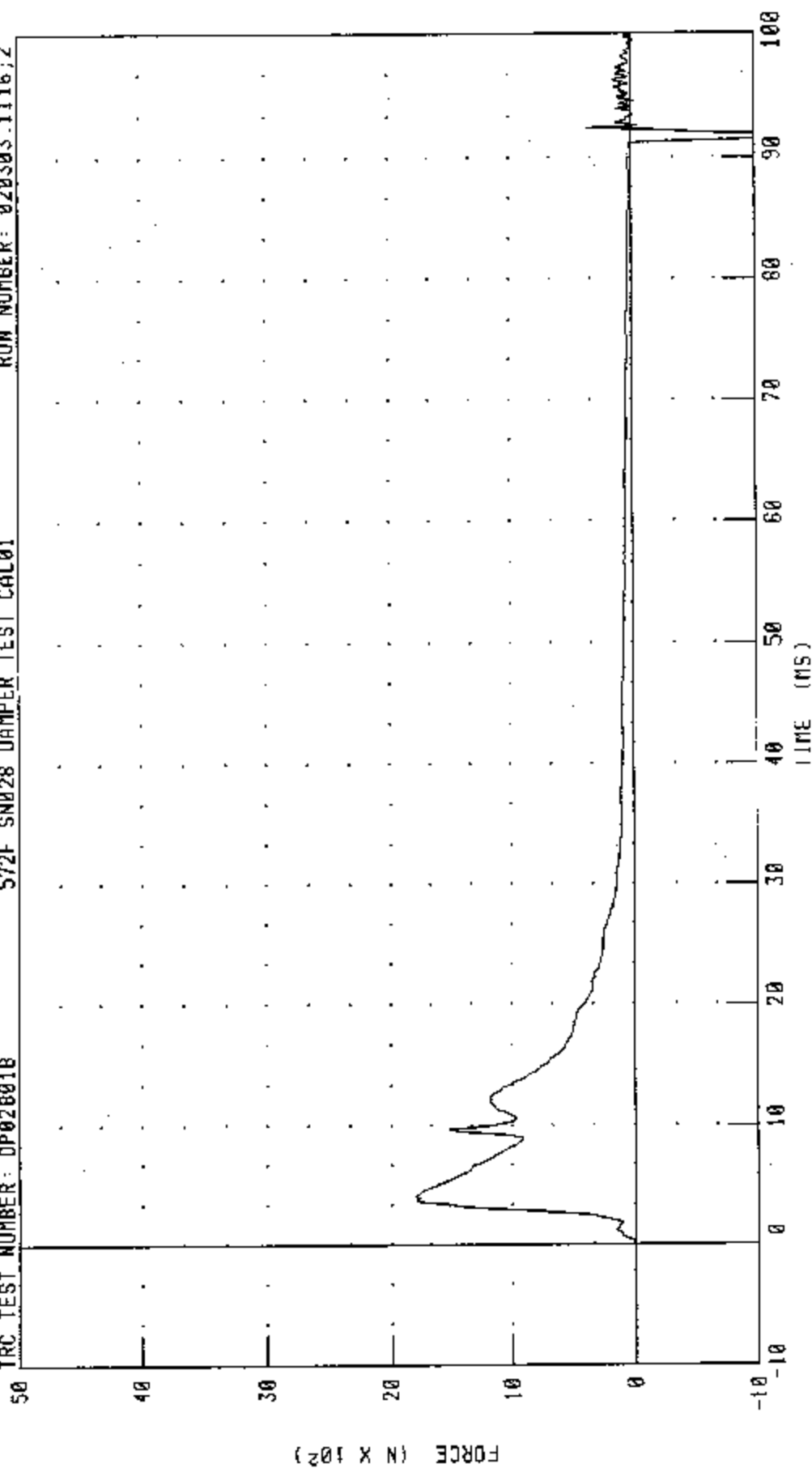
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 N/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP02001B

572F SN028 DAMPER TEST CAL01

RUN NUMBER: 020303.1116;2



TIME (MS)

PEAK DATA 1791 40 N @ 4.16 MS; -2164.23 N @ 91.68 MS

CHANNEL: DAMPF FILTER: CH. CLASS 1000

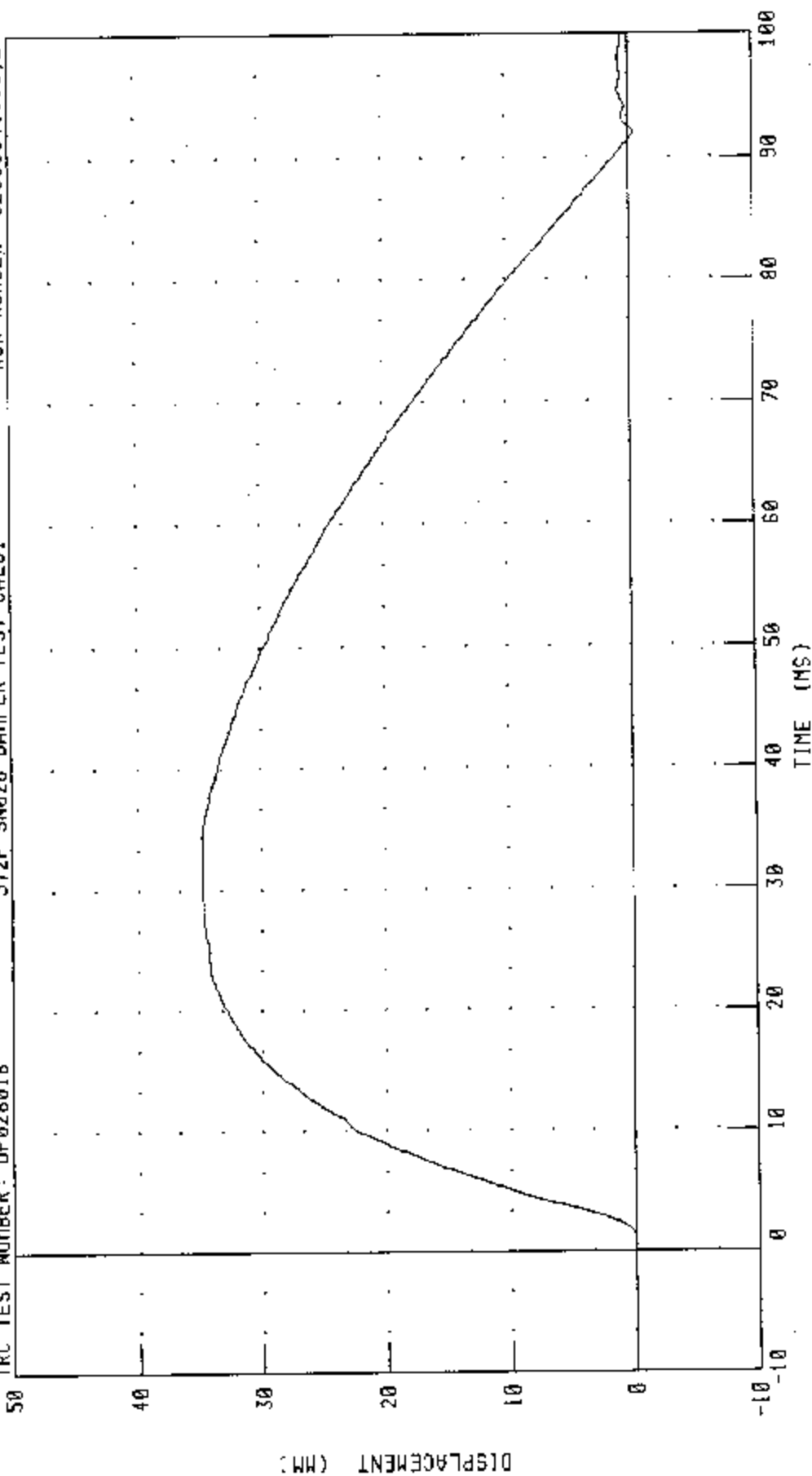
PART 572-F S I D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP02801B

572F SN028 DAMPER TEST CAL01

RUN NUMBER: 020303.1116;2



CHANNEL: CSTYD FILTER CH. CLASS 1000



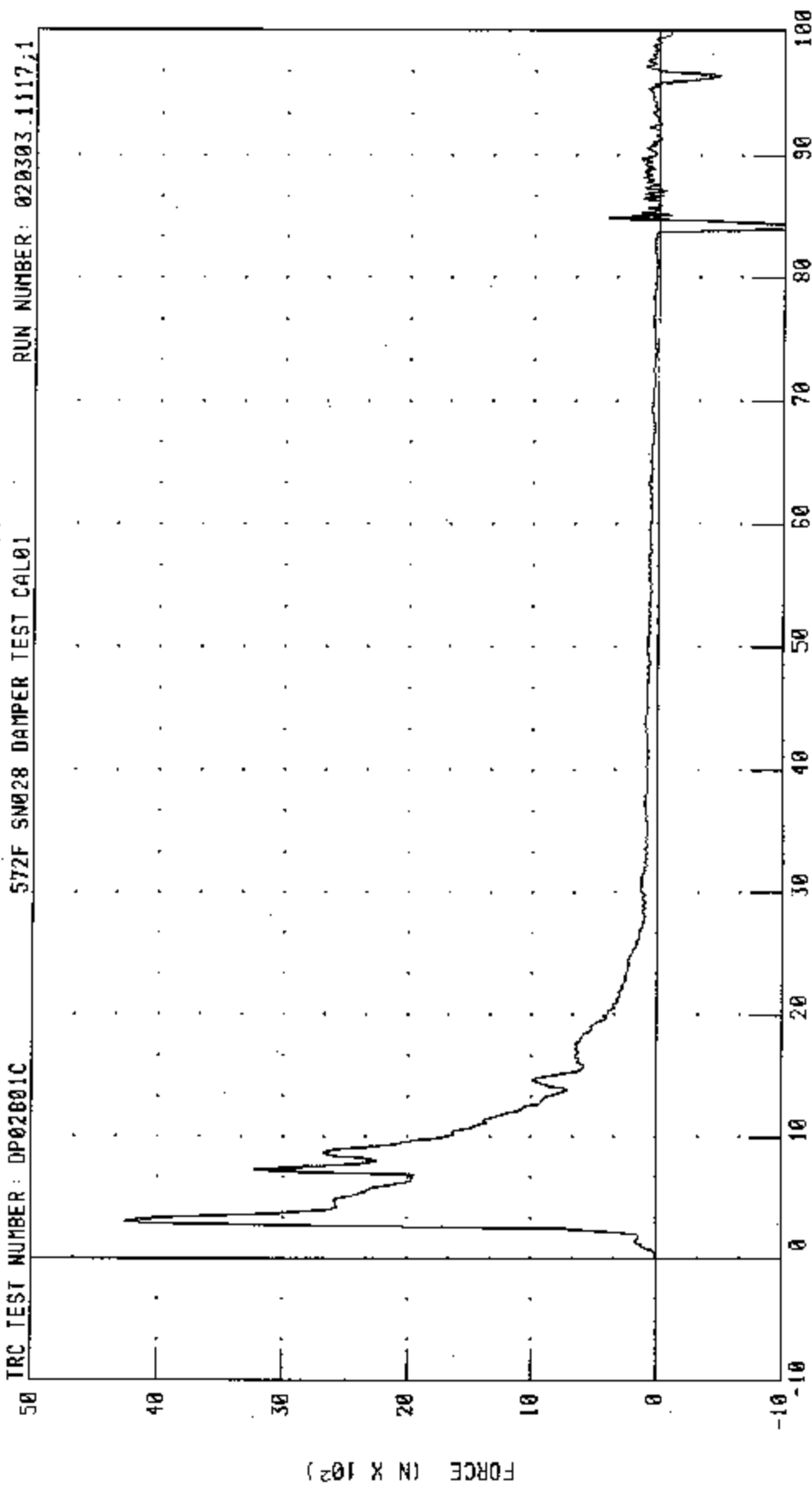
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP02001C

572F SN028 DAMPER TEST CAL01

RUN NUMBER: 020303.1117.1



CHANNEL: DAMPF FILTER: CH. CLASS 1000

PEAK DATA: 4259.31 N @ 3.12 MS, -2213.42 N @ 84.24 MS

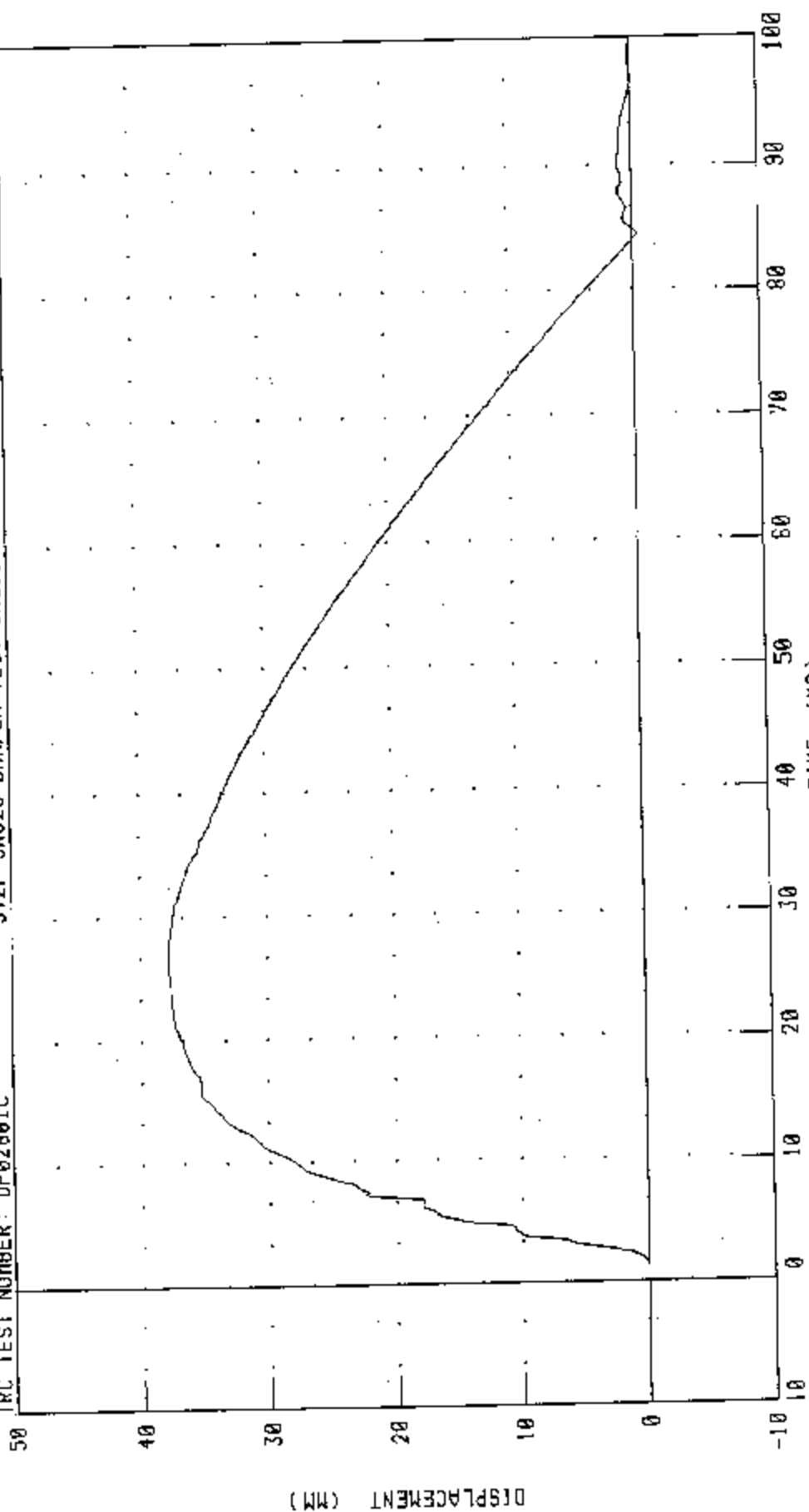
PART 572-F S.I.0 THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER DISPLACEMENT

572F 5N028 DAMPER TEST CAL01

RUN NUMBER: 020303.1117.1

TRC TEST NUMBER: DP02001C



TIME (MS)

PEAK DATA 37.75 MM @ 20.56 MS; -0.36 MM @ 84.48 MS

CHANNEL: CSTY0 FILTER: CIL CLASS 1000

**TRANSPORTATION RESEARCH CENTER INC.**

**LUMBAR FLEXION TEST**

**SID PART 572B**

**CAL DATE: 05-Mar-03**

**TRC, INC.**

**TEST NO: 028C02LF1**

**572B SN 028 TORSO FLEX CAL 02**

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6° C	21.7 °C
RELATIVE HUMIDITY	10 - 70 %	32 %
FORCE AT 0 DEG. FLEXION	-27 - 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 - 151 N	129.0 N
FORCE AT 30 DEG OF FLEXION	151 - 205 N	169.0 N
FORCE AT 40 DEG OF FLEXION	205 - 258 N	226.9 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	5 °

**TEST MEETS SPECIFICATIONS**

**TECHNICIAN** 

## TRANSPORTATION RESEARCH CENTER INC.

## LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

28-FEB-03

LEFT SIDE CONFIGURATION

TAC INC.

TEST NO: SPL02802

572F SN028 LEFT PELVIS CAL02

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	29.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.28 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	48.4 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.2 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 022803.1327;1

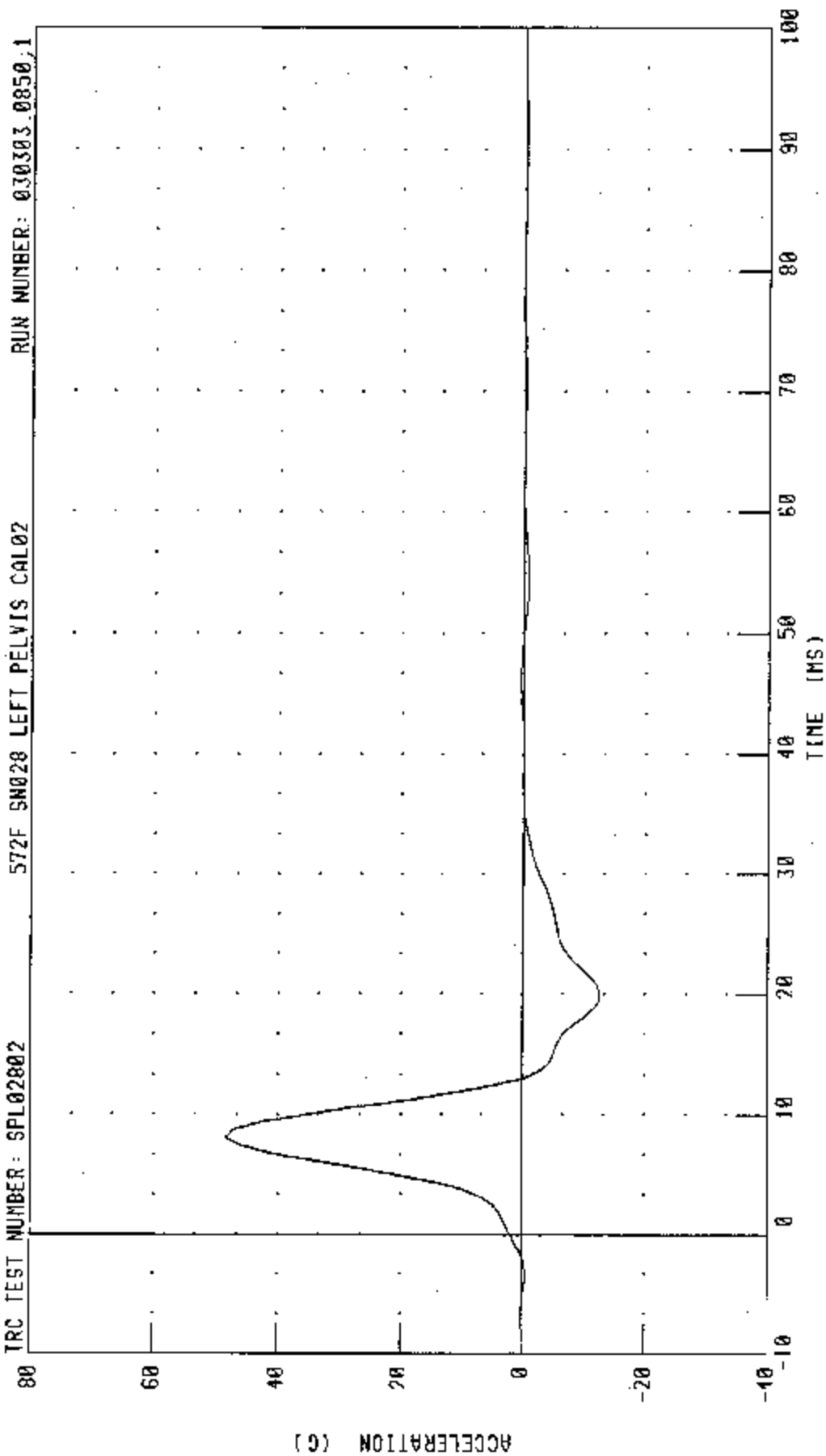
# PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

TRC TEST NUMBER: SPL02802

572F SN028 LEFT PELVIS CAL02

RUN NUMBER: 030303.0850.1



CHANNEL: PEVYC

FILTER: FIR 100

TIME (MS)

PEAK DATA: 48.36 G @ 8.13 MS, -12.62 G @ 20.00 MS

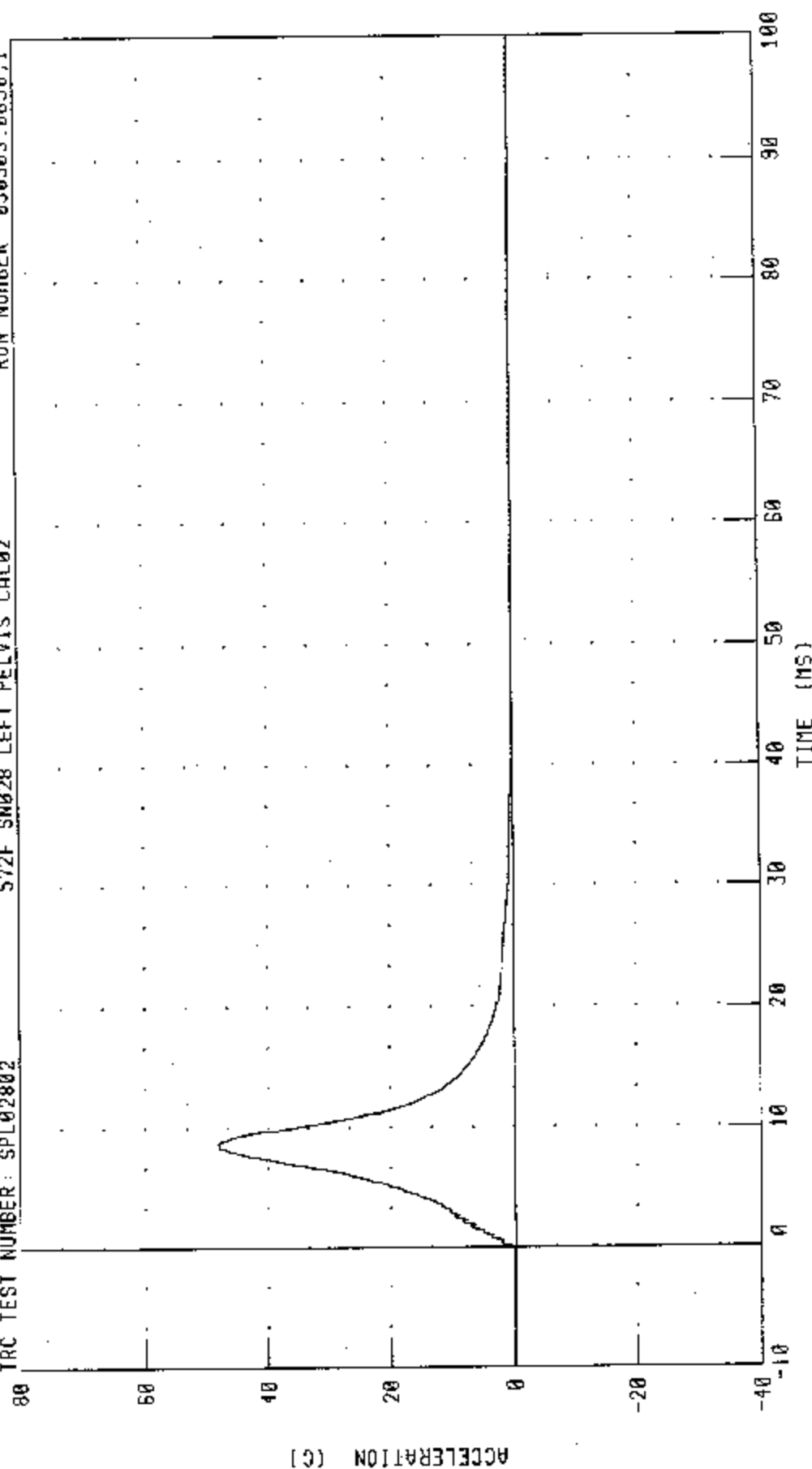
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: SPL02802

572F SN028 LEFT PELVIS CAL02

RUN NUMBER 030303.0850.1



CHANNEL: PENXC FILTER: CH. CLASS 1000

PEAK DATA 48.16 S @ 8.80 MS; -0.18 G @ 97.84 MS

Calibration Test Results

Pre-Test

SID: 065

Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Thoracic Shock Absorber Test:	The thorax passed all shock absorber requirements (tested on February 3, 2003, for a previous calibration series).
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.

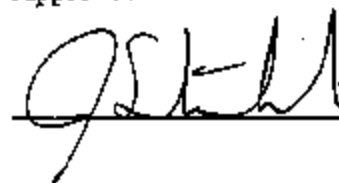
**Transportation Research Center Inc.**  
**572F SID Dummy**  
**External Dimensions**  
**Serial No. 065    Calibration No. 05**

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	899 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	512 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	237 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	513 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	499 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	372 mm	Yes
Top Rib Width From CAL	RW-1	165.1 - 180.3 mm	171 mm	Yes
Bottom Rib Width From CAL	RW-2	165.1 - 180.3 mm	171 mm	Yes
Difference Between Top & Bottom Rib Width from CAL		$\leq 2.5$ mm	0.0 mm	Yes

Technician



Approved



**TRE**



## TRANSPORTATION RESEARCH CENTER INC.

## LATERAL HEAD DROP TEST

HYBRIDIII SID DUMMY

14-MAR-03

## LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. HDL06505

H3/SID SN065 HEAD DROP CAL05

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.67 deg. C
RELATIVE HUMIDITY	10 - 70 %	30.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	145.53 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	-9.09 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 031403.0930;1

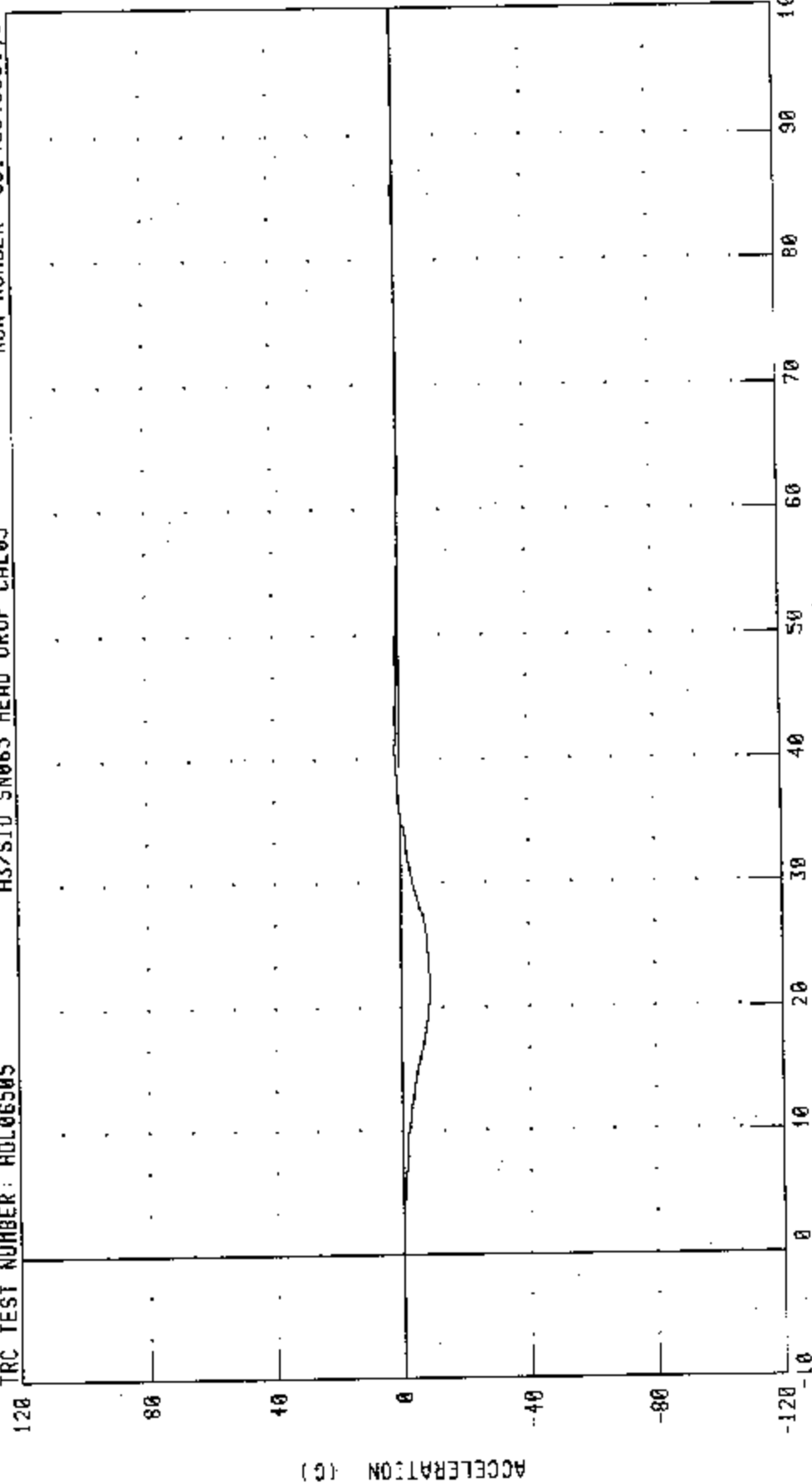
# BIOSID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

RUN NUMBER: 031403.0931.1

H3/SID SN065 HEAD DROP CAL05

TRC TEST NUMBER: HDL06505



PEAK DATA: 1 42 G @ 4.08 MS; -9.09 G @ 2.16 MS

CHANNEL: HDUXG FILTER: CH CLASS 1000

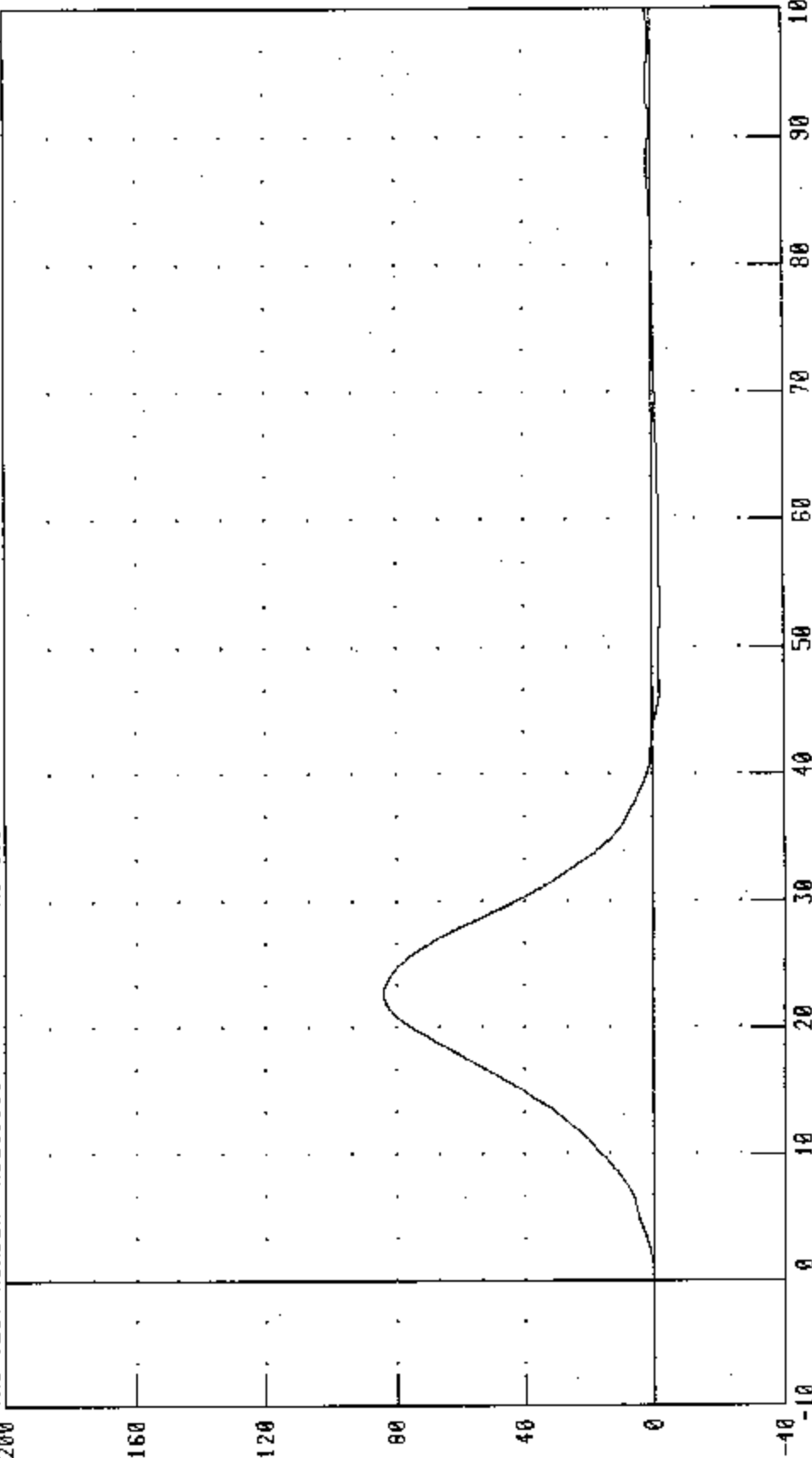
# BIOSID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: HDL06505

H3/SID SN065 HEAD DROP CAL05

RUN NUMBER: 031403.0931.1



PEAK DATA: 83.99 G @ 2.24 MS; -2.55 G @ 5.28 MS

CHANNEL: HEDYC FILTER: CH. CLASS 1000

ACCELERATION (G)

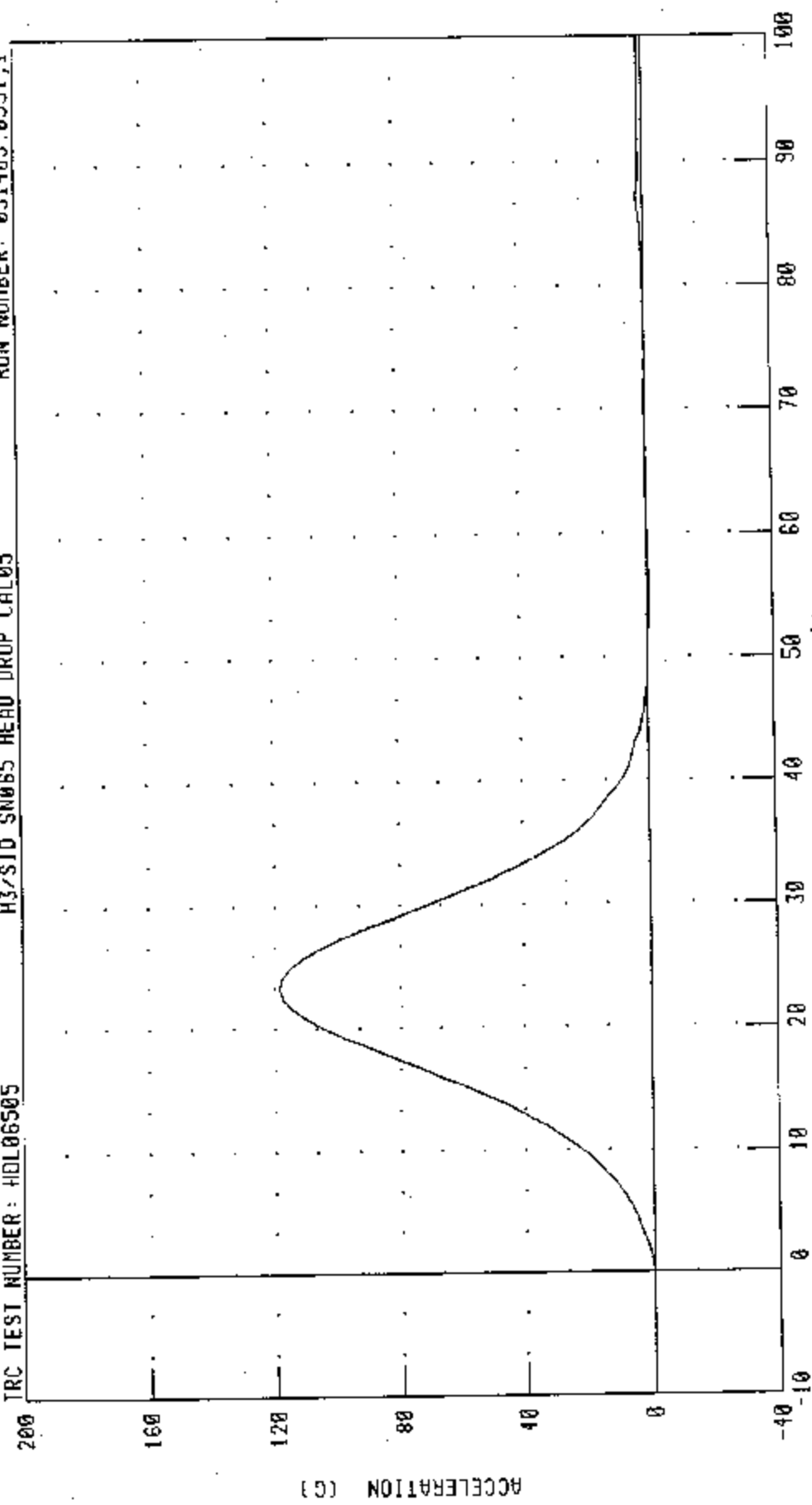
# BIOSID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Z AXIS

RUN NUMBER: 031403.0931;1

H3/SID SN065 HEAD DROP CAL05

TRC TEST NUMBER: HDL06505



TIME (MS X 10<sup>-1</sup>)

PEAK DATA: 110.53 G @ 2.32 MS; -0.78 G @ 5.36 MS

FILTER: CH. CLASS 1000

CHANNEL: HDZG

ACCELERATION (G)

# B10S10 DUNNY CALIBRATION -- 35 DEGREE LEFT LATRAI HEAD DROP

HEAD RESULTANT ACCELERATION

RUN NUMBER: 031403.0931;1

TRC TEST NUMBER: HDL06505

H3/S10 SN065 HEAD DROP CAL05

200

160

120

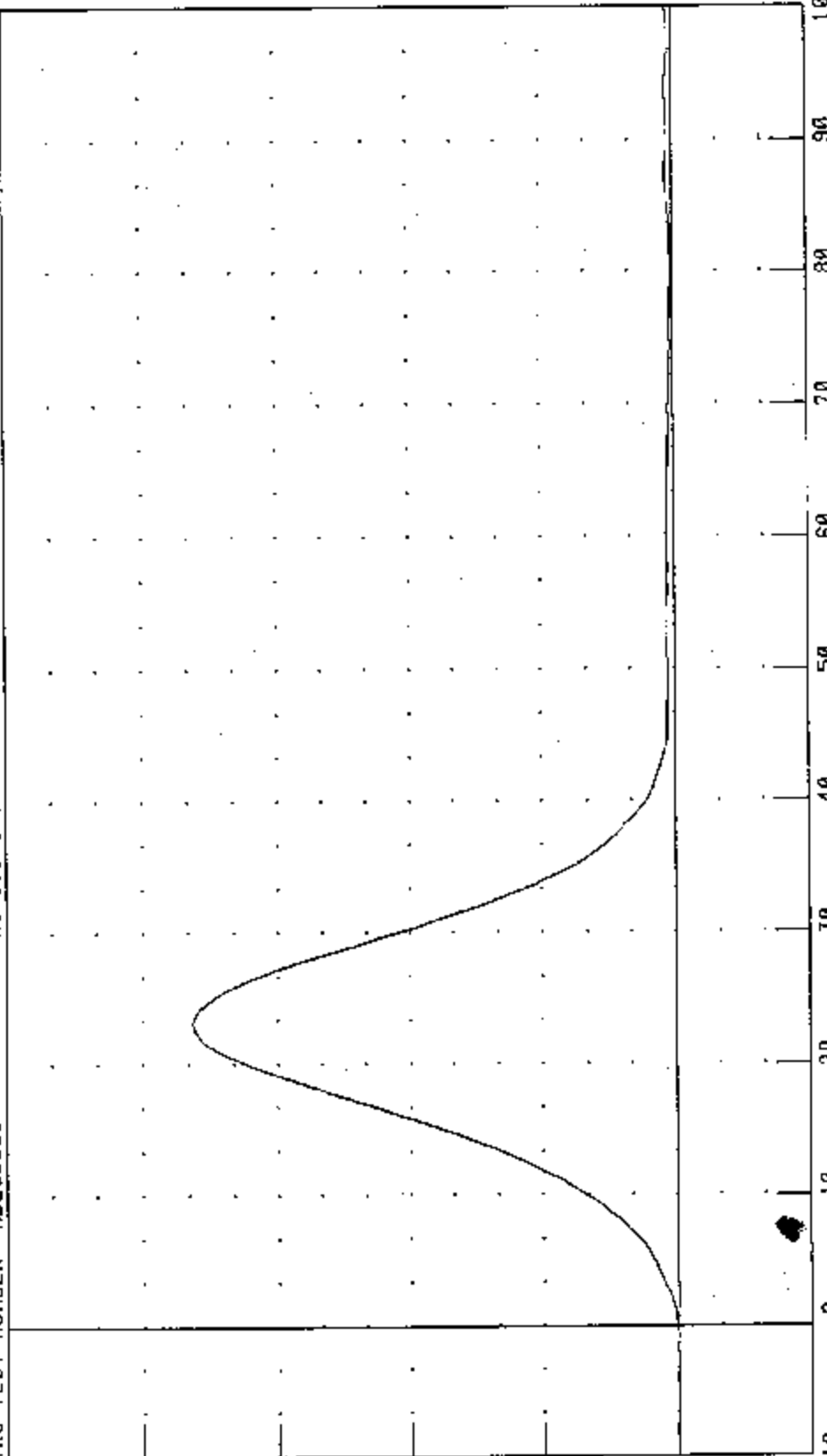
80

40

0

-40

ACCELERATION (G)



TIME (NS X 10<sup>-1</sup>)

PEAK DATA: 145.53 G @ 2.32 MS; 0.05 G @ -0.64 MS

CHANNEL: HEDRG FILTER: CH CLASS 1000

## TRANSPORTATION RESEARCH CENTER INC.

## LATERAL NECK TEST

HYBRIDIII SID DUMMY

14-MAR-03

## LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. NFL06505C

H3/SID SN065 NECK LEFT CAL05

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 deg. C	21.67 deg. C
RELATIVE HUMIDITY		10 - 70 %	30.00 %
IMPACT VELOCITY		6.89 - 7.13 M/S	6.99 M/S
INTEGRATED VELOCITY	10 MS	1.96 - 2.55 M/S	2.40 M/S
	20 MS	4.12 - 5.10 M/S	4.73 M/S
	30 MS	5.73 - 7.01 M/S	6.65 M/S
	40 - 70 MS	6.27 - 7.64 M/S	7.16- 7.25 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION		66 - 82 deg.	68.26 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO		58 - 67 MS	58.56 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE		73 - 88 NM	81.87 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO		49 - 64 MS	49.52 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT		2 - 16 MS	10.16 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 031403.1346;1

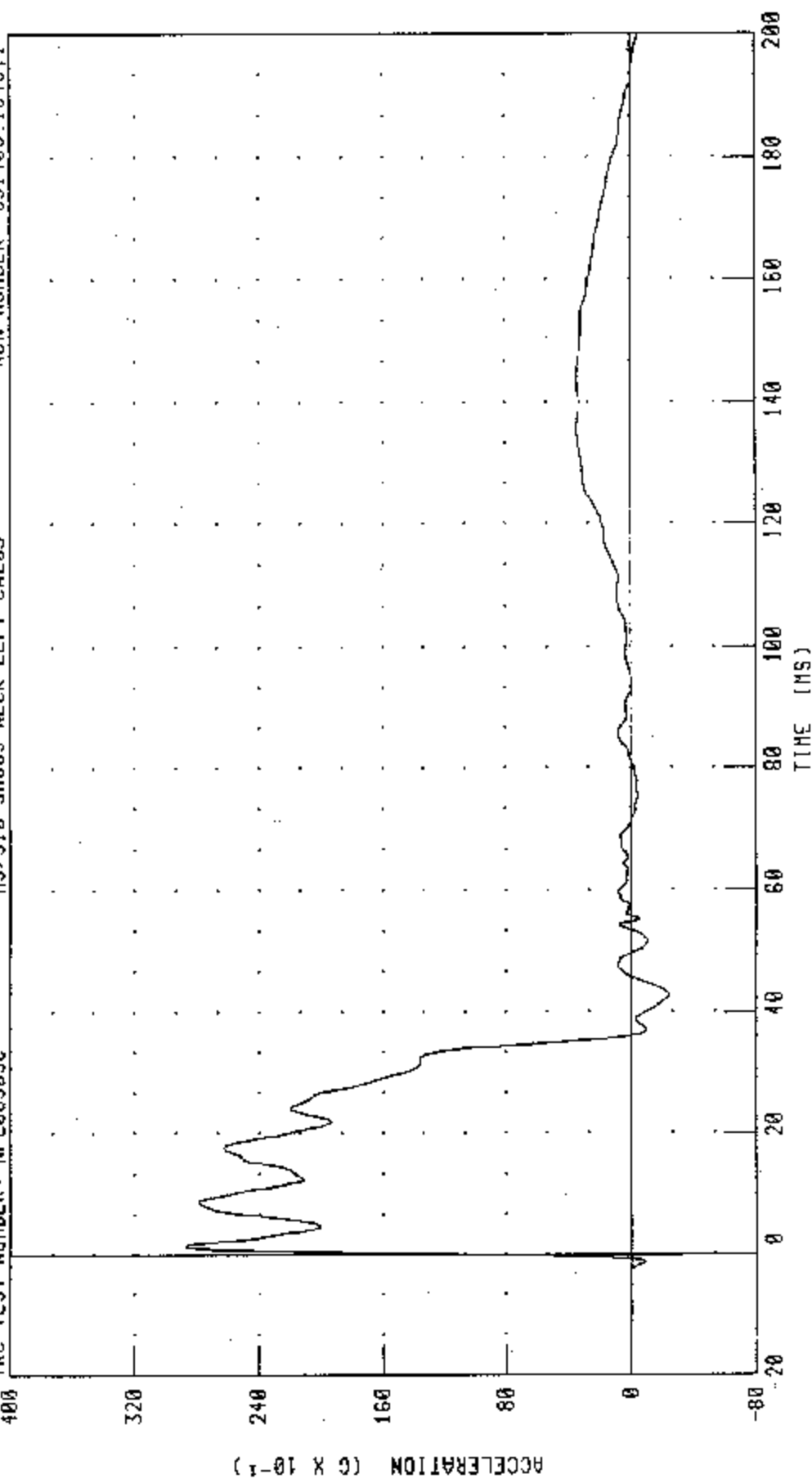
# H3/SID DUNNY CALIBRATION -- LEFT LATERAL NECK TEST

PENDULUM DECELERATION

TRC TEST NUMBER: NFL06505C

H3/SID SN065 NECK LEFT CAL05

RUN NUMBER: 031403.1348.1



PEAK DATA: 28.72 G @ 1.36 MS; -2.44 G @ 42.88 MS

CHANNEL: PENXC FILTER: CH. CLASS 180

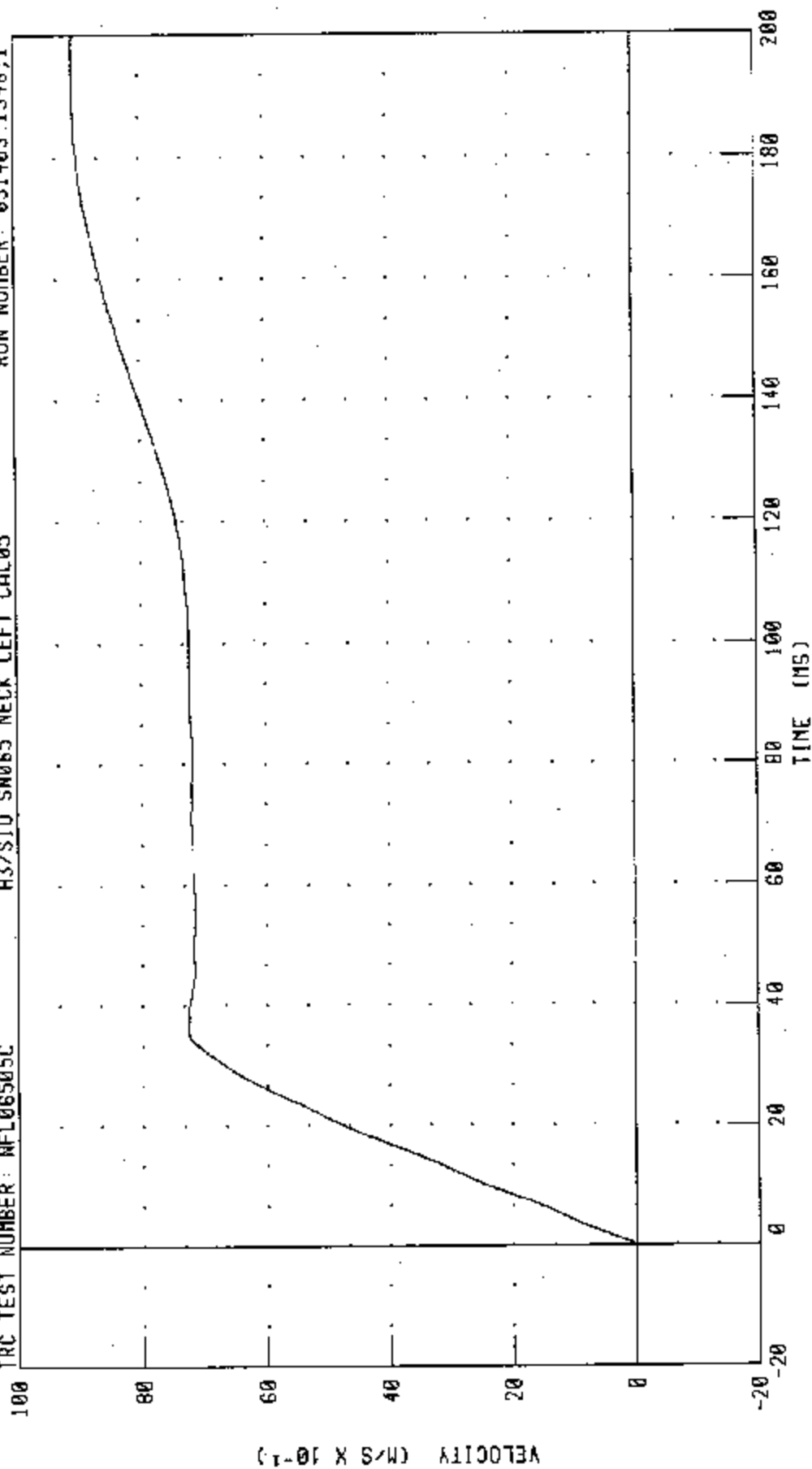
# H3/S10 DUNNY CALIBRATION -- LEFT LATERAL NECK TEST

INTEGRATED PENDULUM VELOCITY

H3/S10 SN065 NECK LEFT CAL05

TRC TEST NUMBER: NFL06505C

RUN NUMBER: 031403.1348;1



PEAK DATA: 9 00 M/S @ 192 00 MS; -0.01 M/S @ -0.00 MS

CHANNEL: PENXVI FILTER: CH. CLASS 180



# H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT BASE OF NECK

RUN NUMBER: 031403 1348.1

TRC TEST NUMBER: NFL06505C

H3/SID SN055 NECK LEFT CAL05

120

90

60

30

0

-30

-60

ANGLE (°)

TIME (MS)

PEAK DATA: 25 24 ° @ 60.96 MS; -11.02 ° @ 143.84 MS

CHANNEL: BETA FILTER: CH. CLASS 60

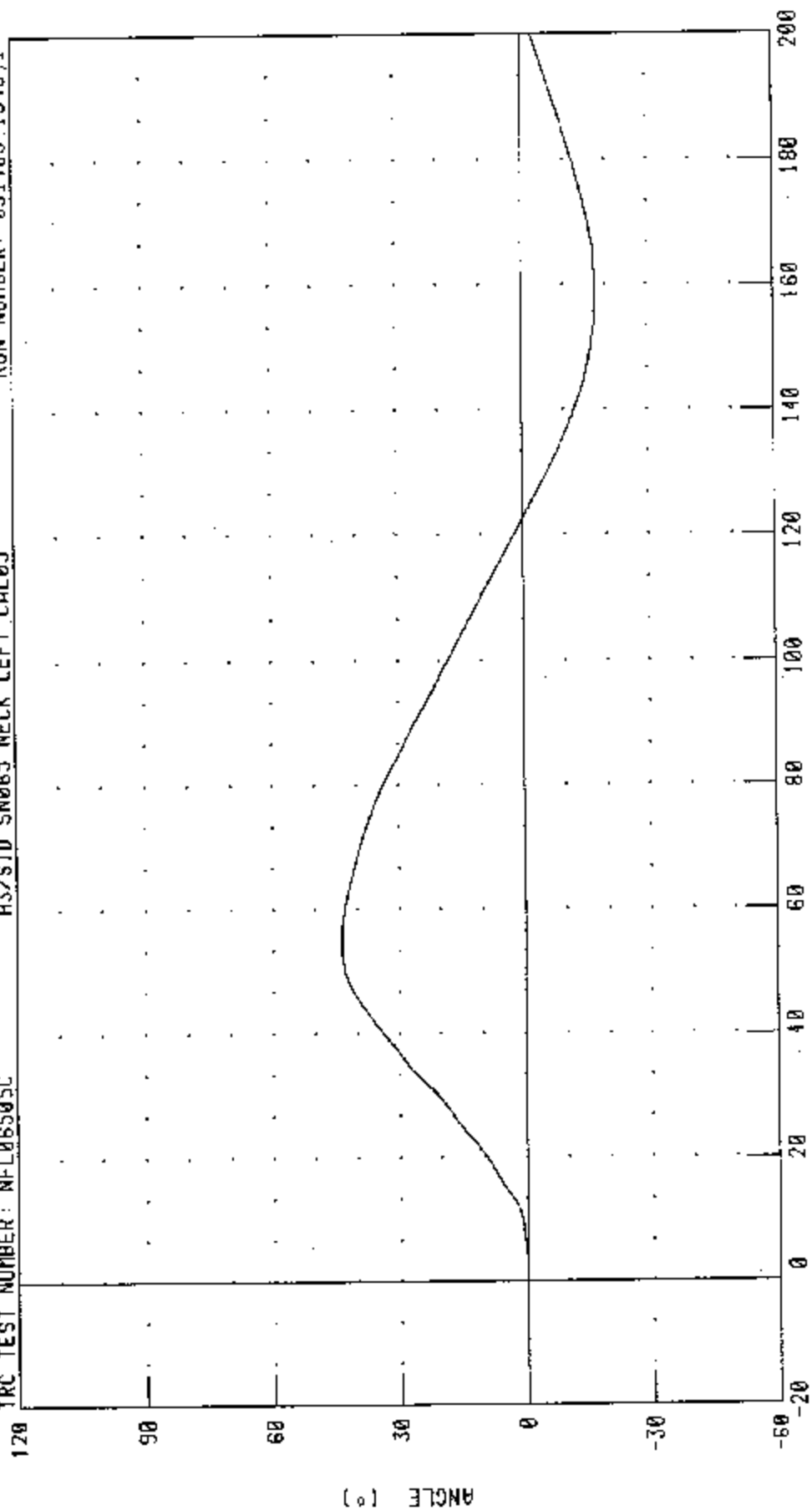
# H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT OCCIPITAL CONOYLE

RUN NUMBER: 031403.1348.1

TRC TEST NUMBER: NFL06505C

H3/SID SN065 NECK LEFT CAL05



PEAK DATA: 43.65 ° @ 54.80 MS; -17.55 ° @ 158.80 MS

CHANNEL: THETA FILTER CH CLASS 60

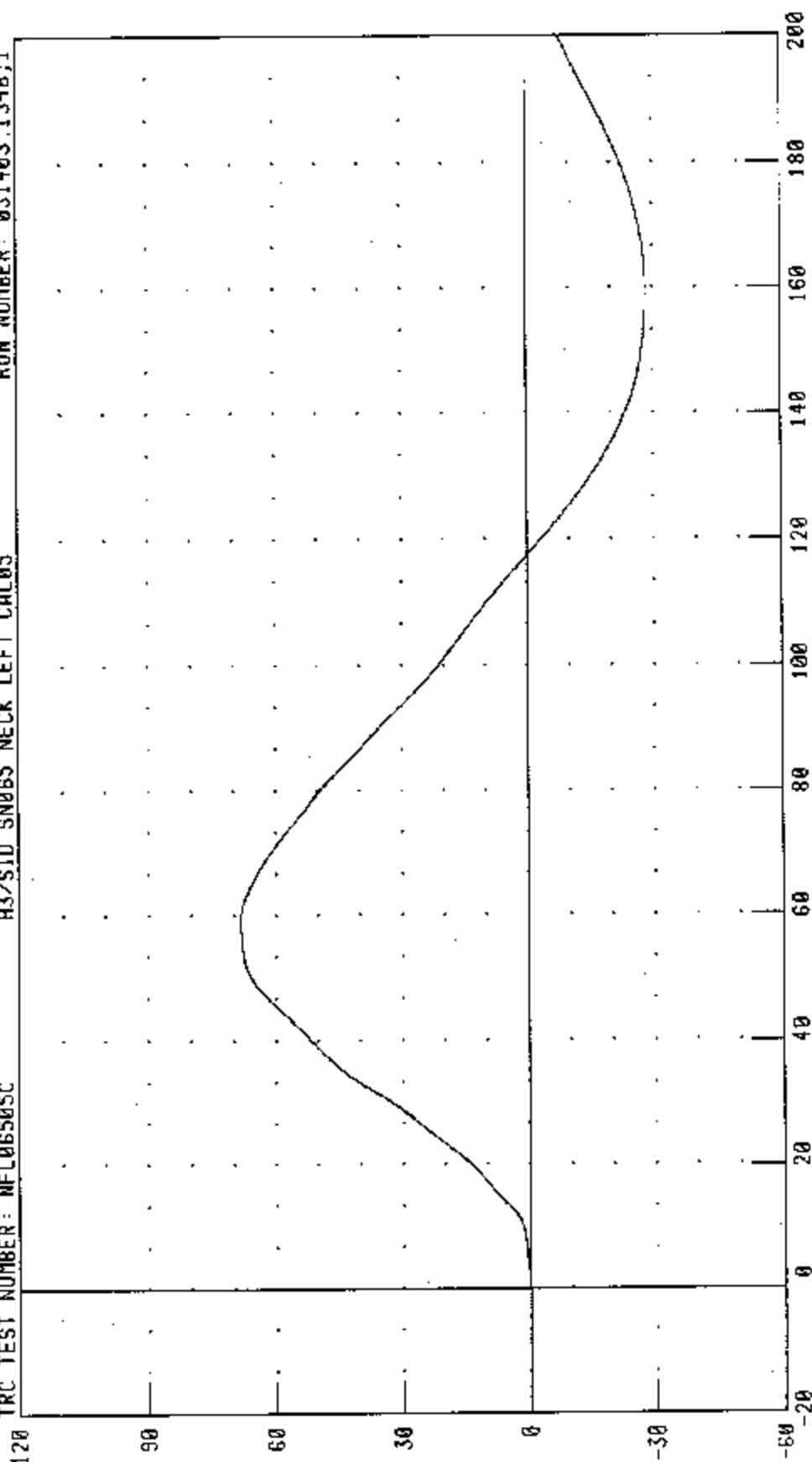
# H3/S10 DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

TOTAL ROTATION

TRC TEST NUMBER: MFL06505C

H3/S10 SN085 NECK LEFT CAL05

RUN NUMBER: 031403.1348;1



TIME (MS)

PEAK DATA: 68.26 ° @ 58.96 MS, -20.20 ° @ 158.96 MS

CHANNEL: TOTAN FILTER: CH. CLASS 60

ANGLE (°)

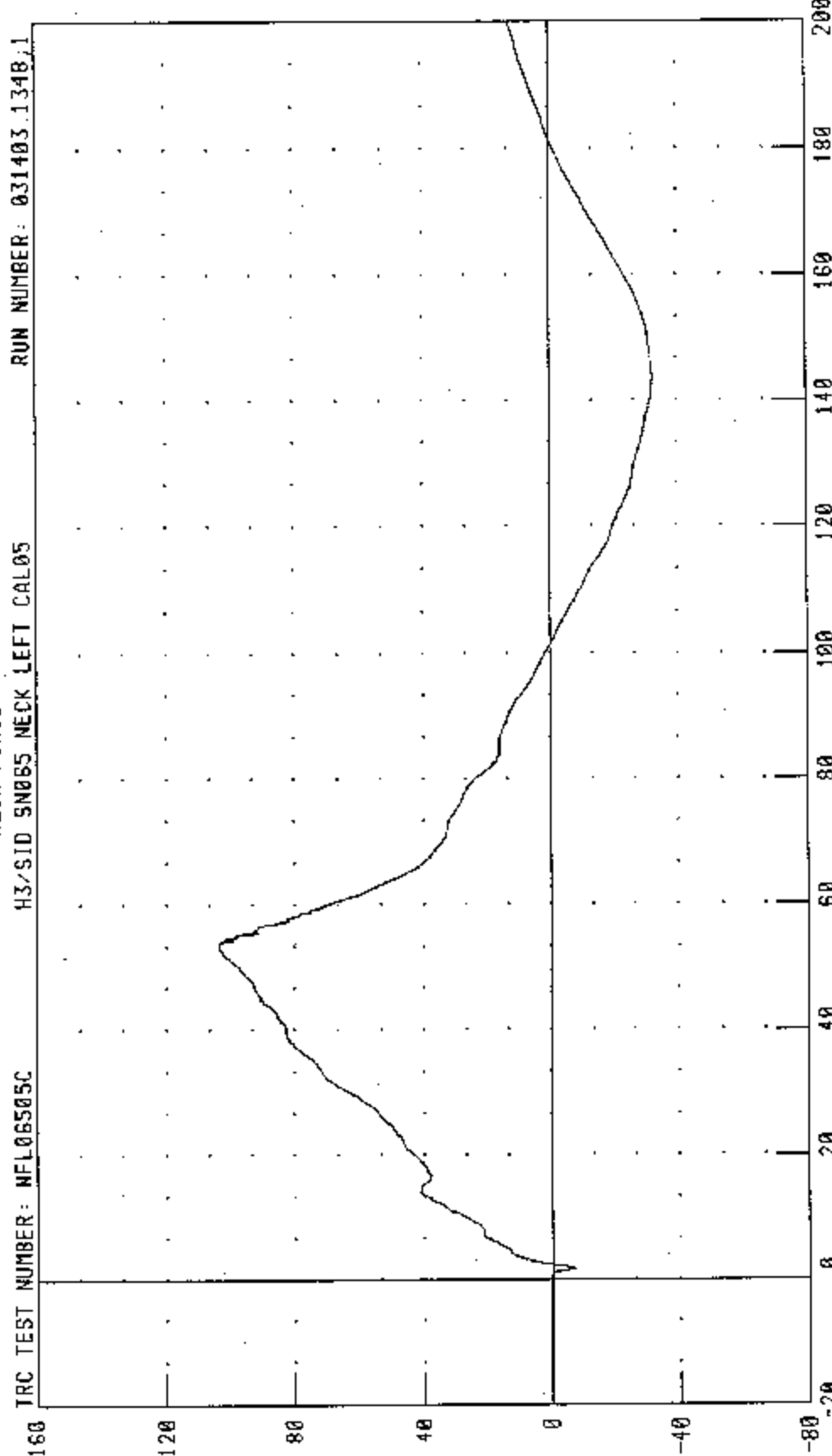
# H3/S10 DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK FORCE Y AXIS

TRC TEST NUMBER: WFL06505C

H3/S10 SN065 NECK LEFT CAL05

RUN NUMBER: 031403.1348.1



PEAK DATA

1036 67 N @ 53.92 MS; -325 63 N @ 143.36 MS

CHANNEL: NEKYF FILTER: CH. CLASS 1000

(101 X N) 30803

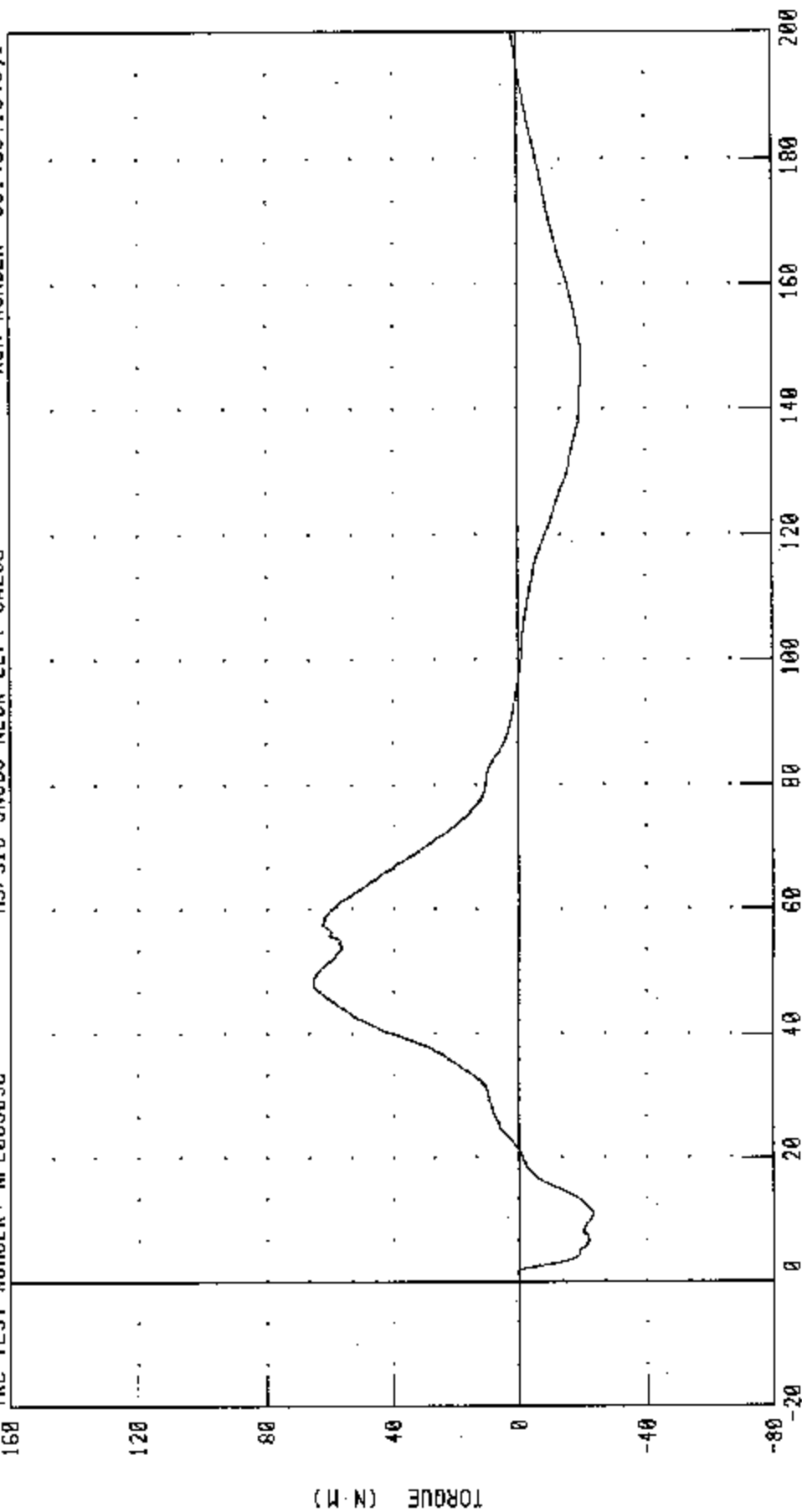
# H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK MOMENT X AXIS

TRC TEST NUMBER: NFI06505C

H3/SID SN055 NECK LEFT CAL05

RUN NUMBER: 031403.1348.1



TIME (MS)

PEAK DATA: 65.17 N M @ 49.00 MS, -23.04 N M @ 11.04 MS

FILTER: CH. CLASS 600

CHANNEL: NECKX1

TORQUE (N·M)

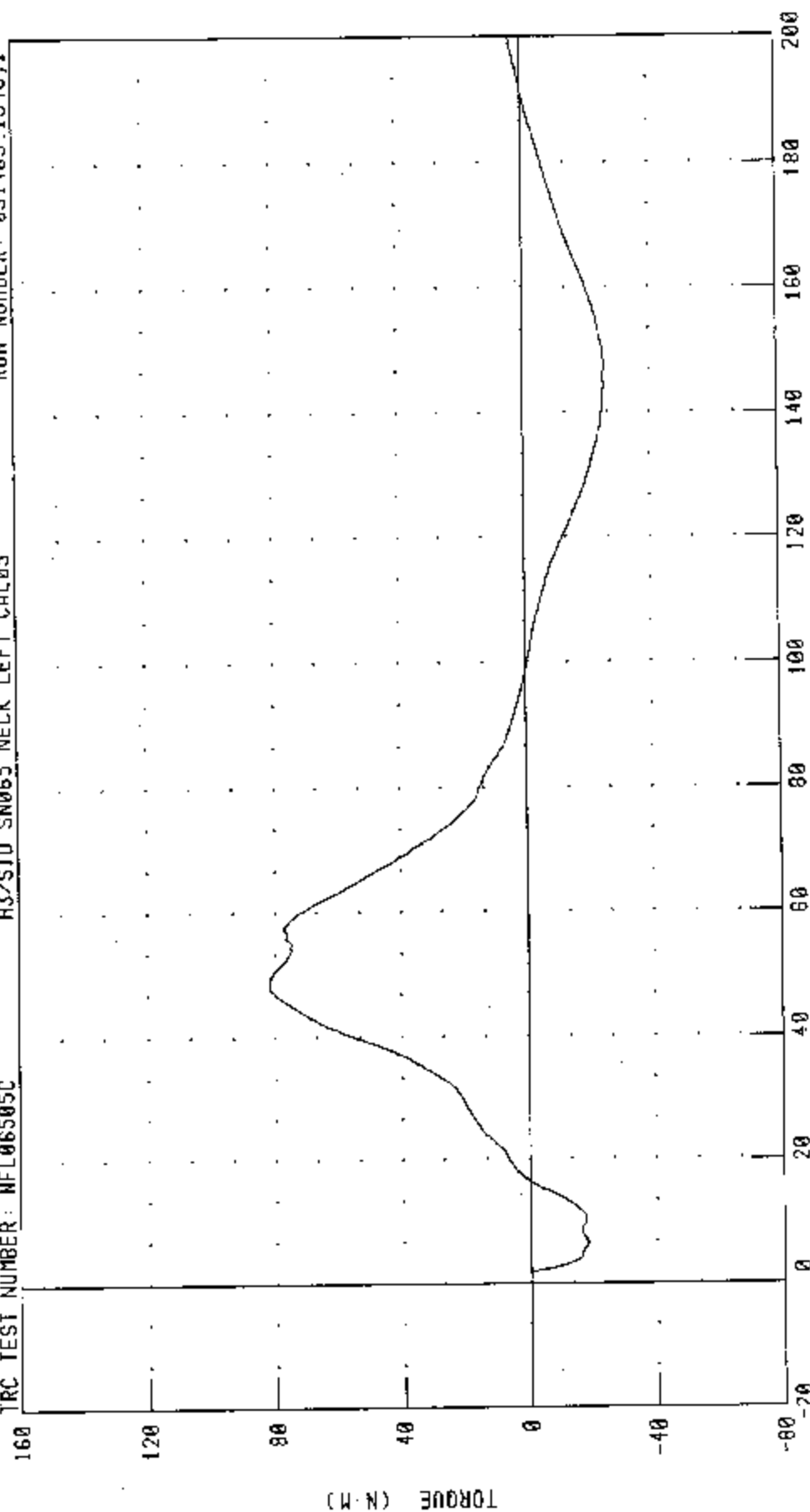
# H3/S1D DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

RUN NUMBER: 031403.1348,1

H3/S1D SN065 NECK LEFT CAL05

TRC TEST NUMBER: WFL06505C



TIME (MS)

PEAK DATA: 81.87 N·m @ 40.00 MS, -25.71 N·m @ 147.20 MS

CHANNEL NEKOM FILTER CH. CLASS 600

## TRANSPORTATION RESEARCH CENTER INC.

## LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

14-MAR-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: STL06505

572F SID SN065 L.THORAX CAL05

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.28 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	40.7 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	39.8 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	19.4 G

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 031703.1304;1

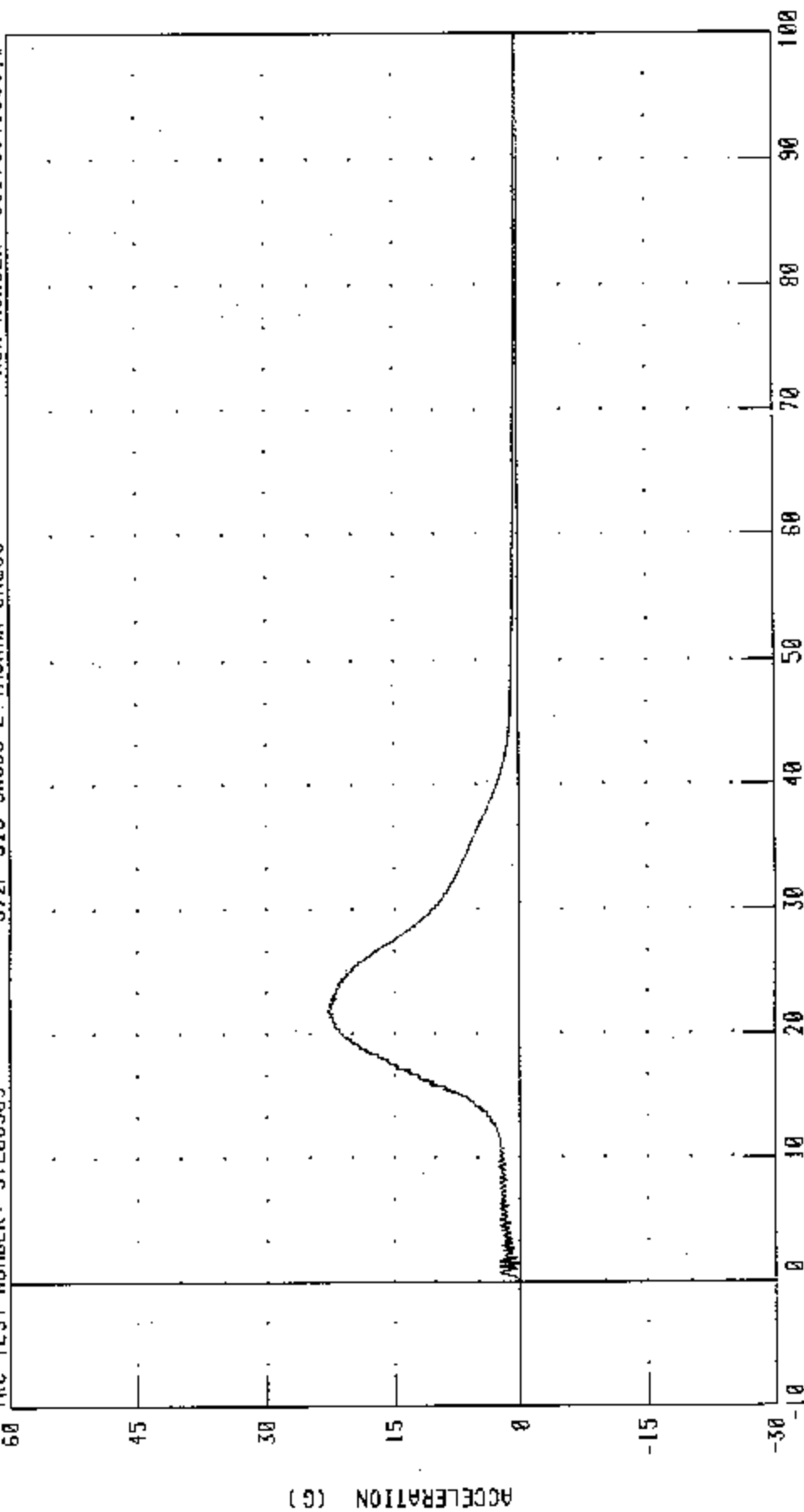
# PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

## PENDULUM DECELERATION

TRC TEST NUMBER: STL06505

572F SID SN065 L THORAX CAL05

RUN NUMBER: 031703.1306.1



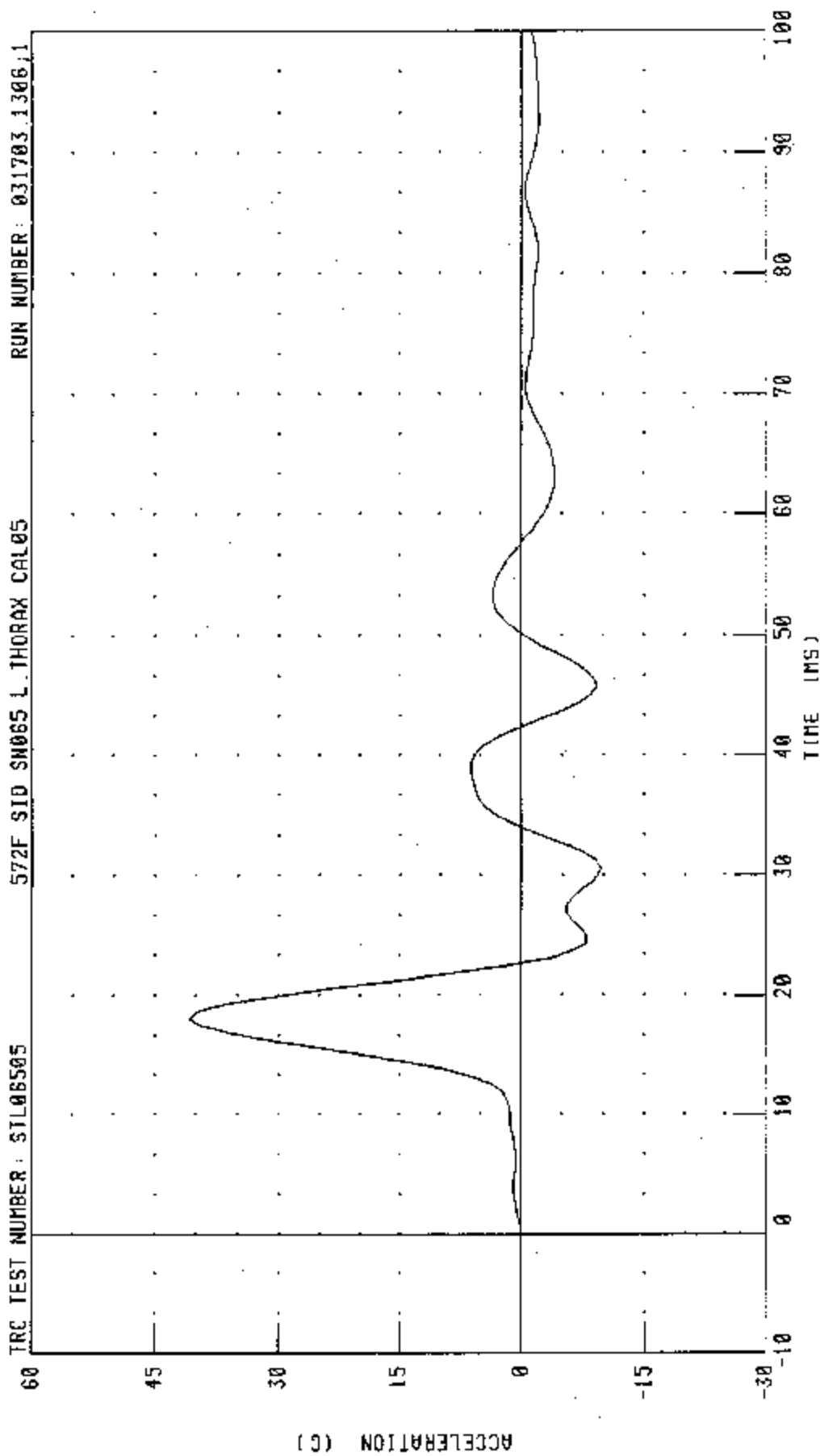
TIME (MS)

PEAK DATA: 22.79 G @ 21.92 MS; 0.02 G @ -9.52 MS

CHANNEL: PENXG FILTER: CH. CLASS 1000



PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)  
 LEFT UPPER RIB ACCELERATION Y AXIS



CHANNEL: LURVC FILTER: FIR 100

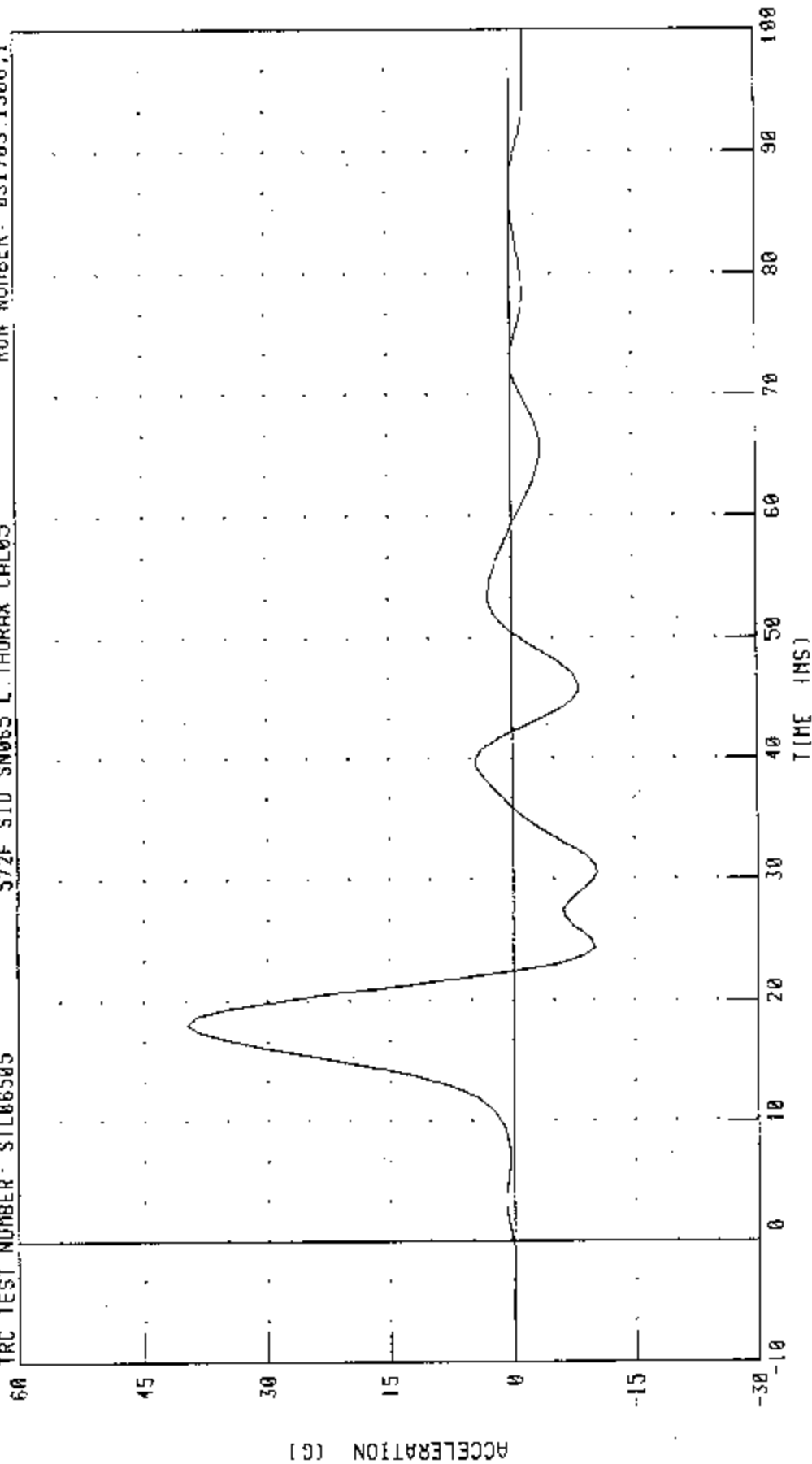
# PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT LOWER RIB ACCELERATION Y AXIS

TRC TEST NUMBER - STL06505

572F SID SN065 L THORAX CAL05

RUN NUMBER - 031703.1306.1



PEAK DATA: 39.81 G @ 18.13 MS; -10.39 G @ 30.67 MS

CHANNEL: LLRYG FILTER: FJR 100

PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

572F SID SN065 L THORAX CAL05

TRC TEST NUMBER: STL06505

40

30

20

10

0

-10

-20

ACCELERATION (G)

TIME (NS)

100

90

80

70

60

50

40

30

20

10

0

-10

-20

0

10

20

30

40

50

60

70

80

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100

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# Transportation Research Center Inc.

572B Abdomen Compression Test

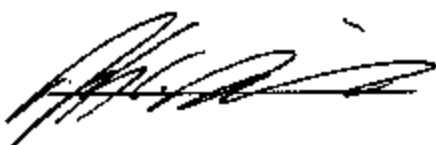
HIII SID Serial No. 065 Calibration No. 05 - 1

Test Date 02/27/2003

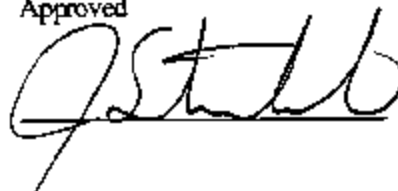
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	7.1 - 8.0 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician



Approved



03.17.2003 13:09:46 107

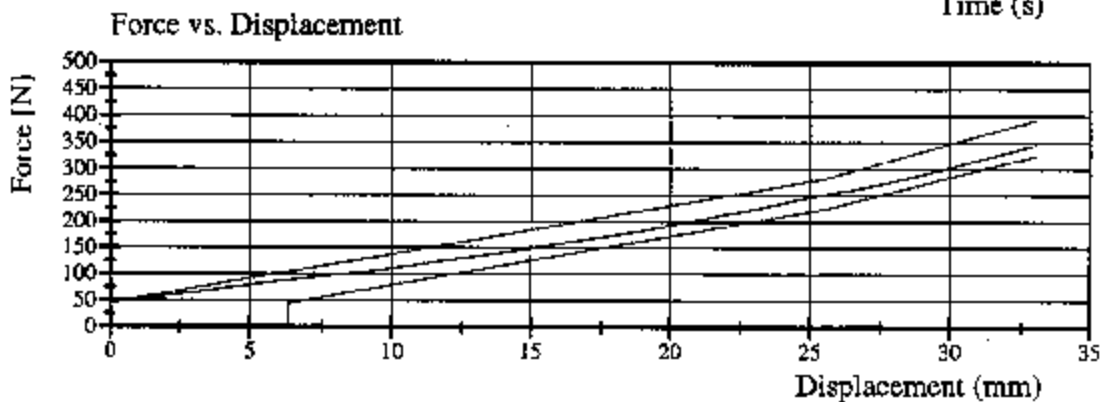
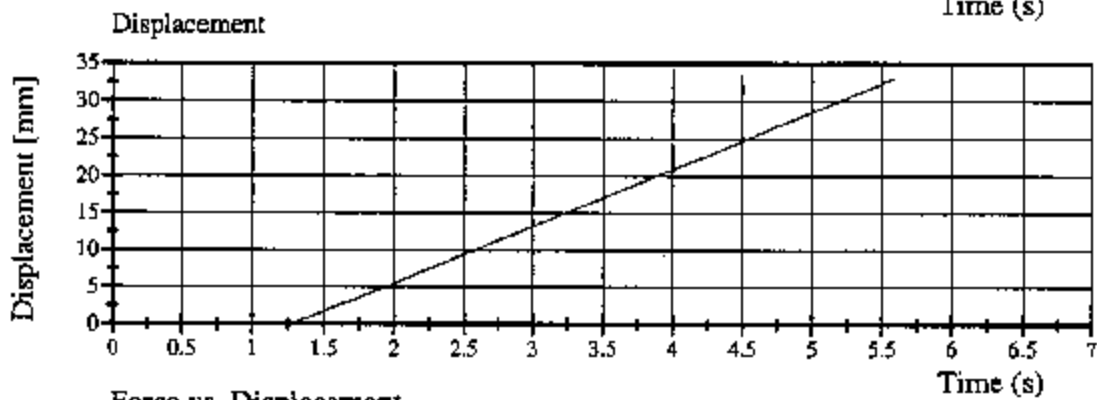
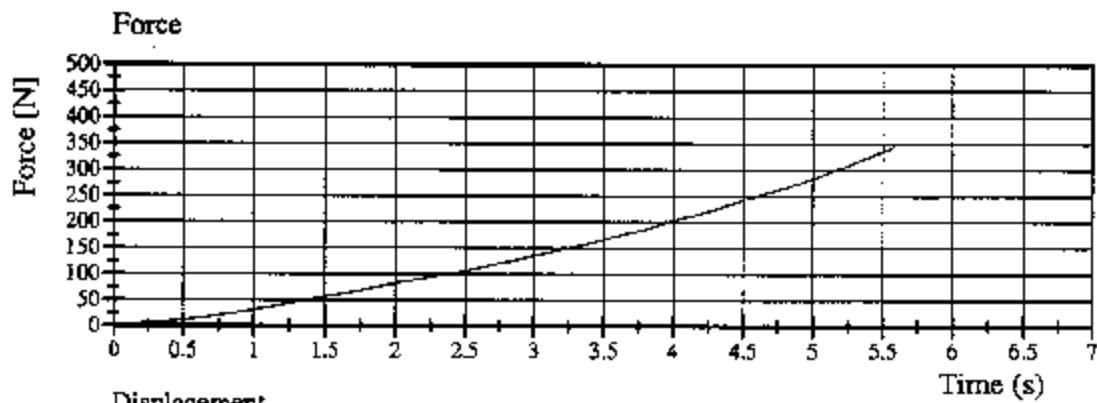


# Transportation Research Center Inc.

572B Abdomen Compression Test

HIH SID Serial No. 065 Calibration No. 05 - 1

Test Date 02/27/2003



## TRANSPORTATION RESEARCH CENTER INC.

## THORACIC SHOCK ABSORBER TESTS

SIDE IMPACT DUMMY

03-FEB-03

TRC INC.

572F SN066 DAMPER TEST CAL02

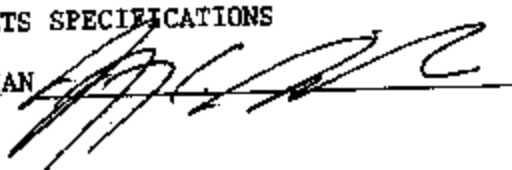
TEST NUMBERS: DP06602A, DP06602B, DP06602C

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY		10 - 70 %	46.0 %
VELOCITY 2.70 M/S	FORCE	667 - 925 N	797 N
	DISPLACEMENT	29.7 - 34.5 MM	29.9 MM
VELOCITY 4.26 M/S	FORCE	1733 - 2100 N	1877 N
	DISPLACEMENT	31.6 - 37.2 MM	35.9 MM
VELOCITY 6.07 M/S	FORCE	3703 - 4402 N	4387 N
	DISPLACEMENT	33.3 - 39.5 MM	37.8 MM

DAMPER SETTING = 5.0

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 020303.0731;1

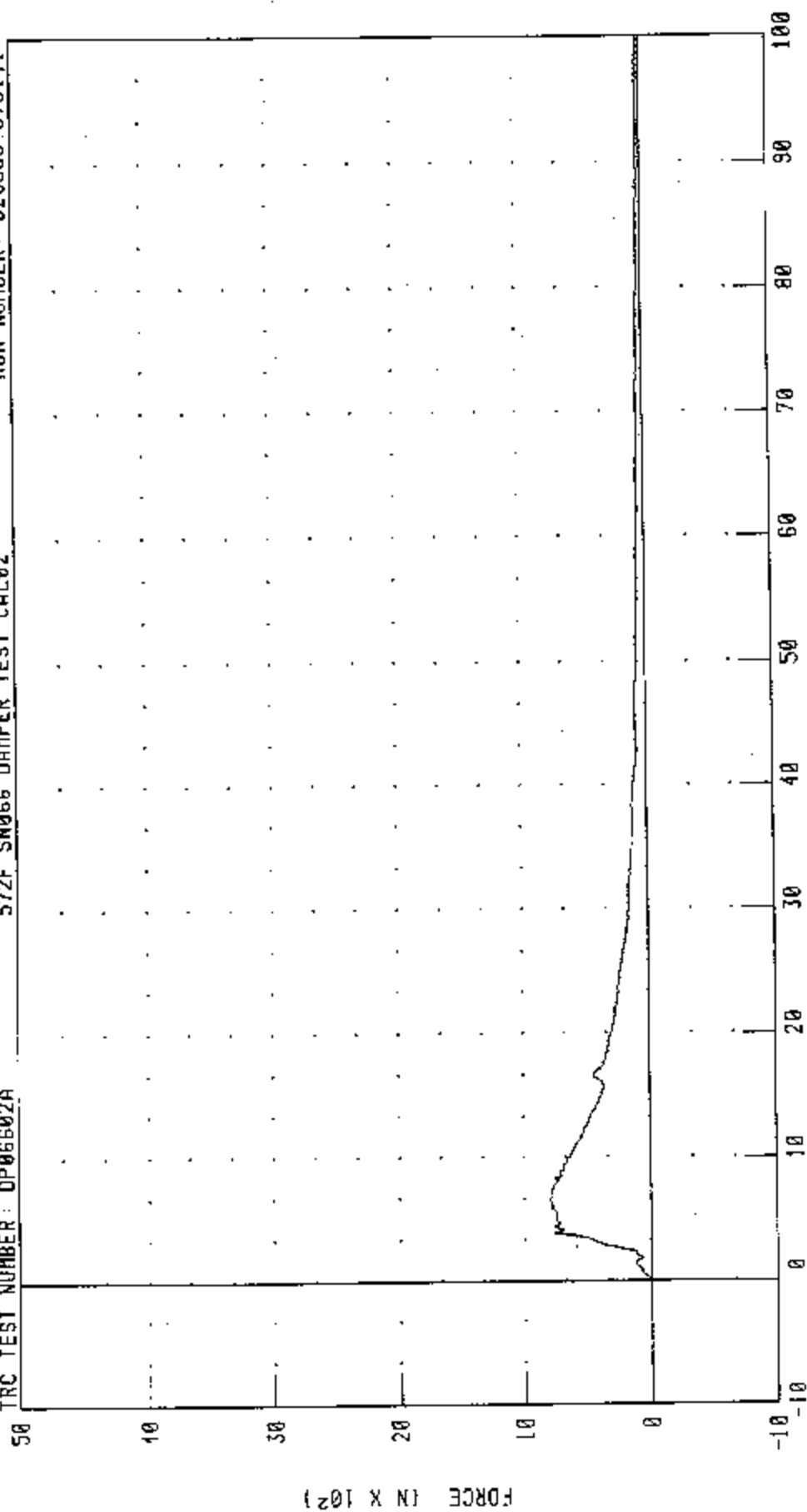
# PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

572F SN066 DAMPER TEST CAL02

TRC TEST NUMBER: DP06602A

RUN NUMBER: 020303.0731.1



PEAK DATA: 736.77 N @ 6.48 MS, -2.09 N @ -10.00 MS

CHANNEL: DAMPF FILTER: CH. CLASS 1000

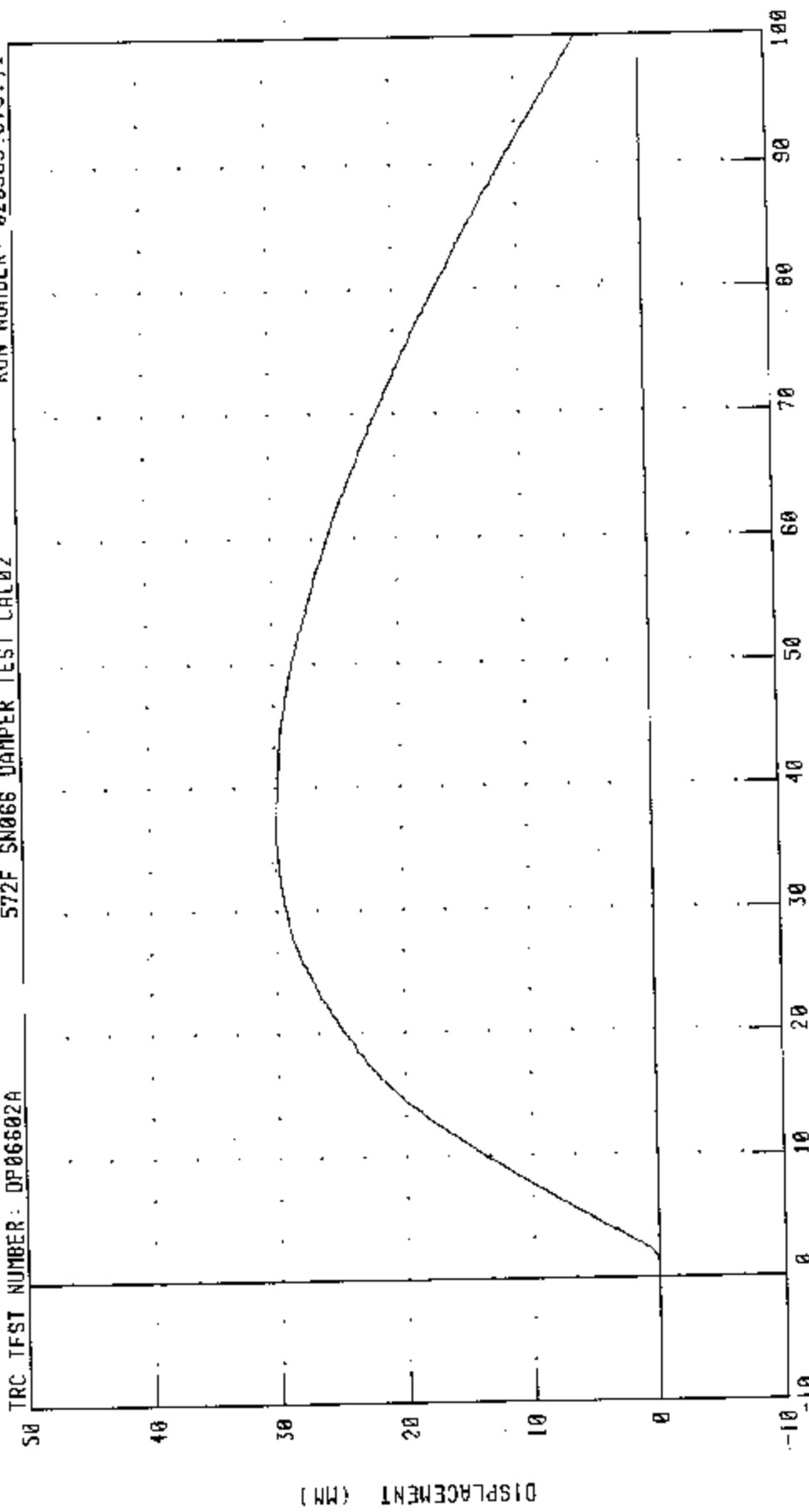
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER DISPLACEMENT

572F SN066 DAMPER TEST CAL02

RUN NUMBER: 020303 0731;1

TRC TEST NUMBER: DP06502A



PEAK DATA: 29.94 MM @ 36.24 MS; 0.00 MM @ -4.40 MS

CHANNEL: CSTYD FILTER: CH CLASS 1000



PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 N/SEC)

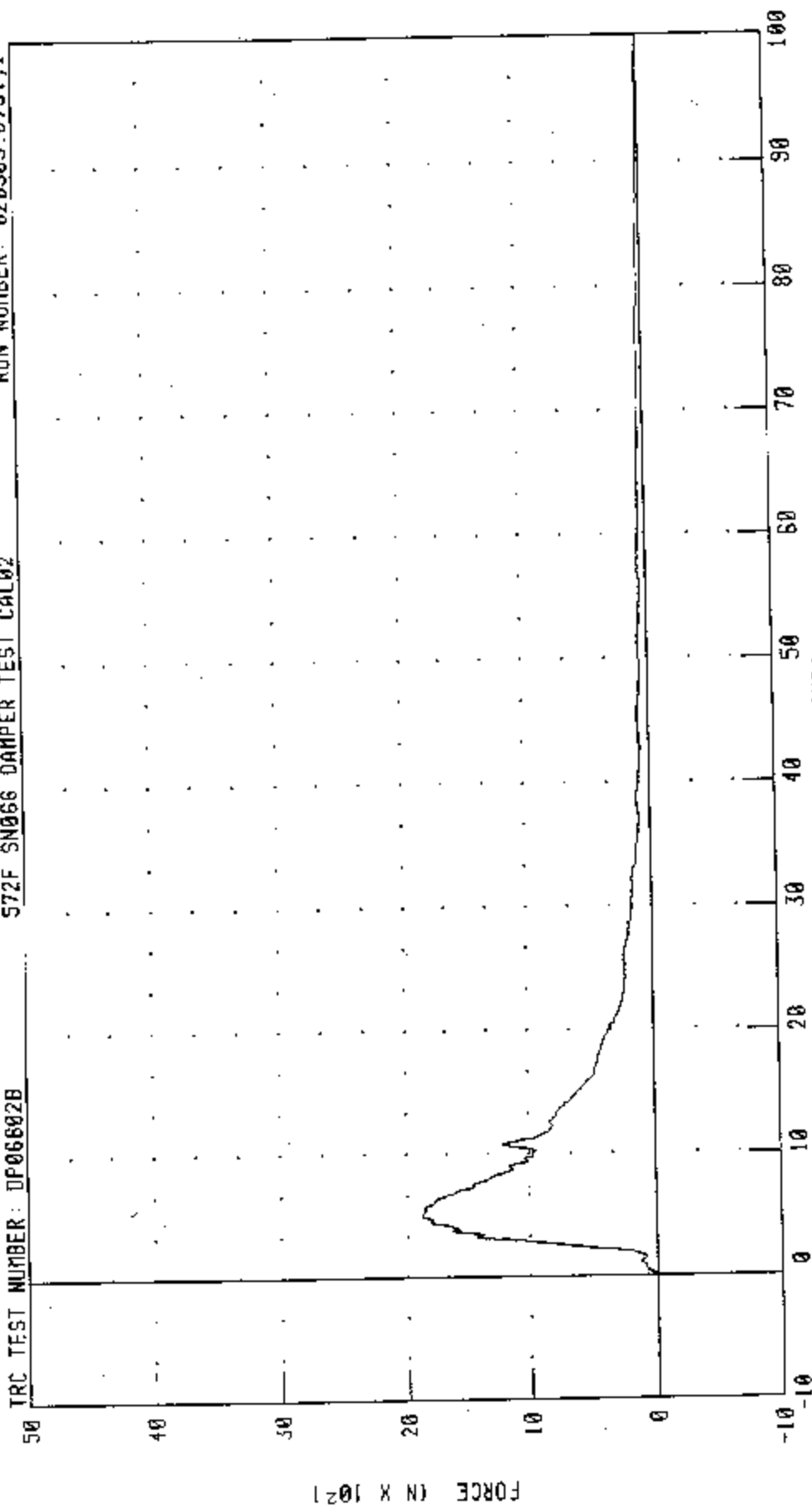
SHOCK ABSORBER RESISTIVE FORCE

572F SN066 DAMPER TEST CAL02

TRC TEST NUMBER: DP06602B

572F SN066 DAMPER TEST CAL02

RUN NUMBER: 020303.0731;1



CHANNEL: QAMPF FILTER: CH. CLASS 1000

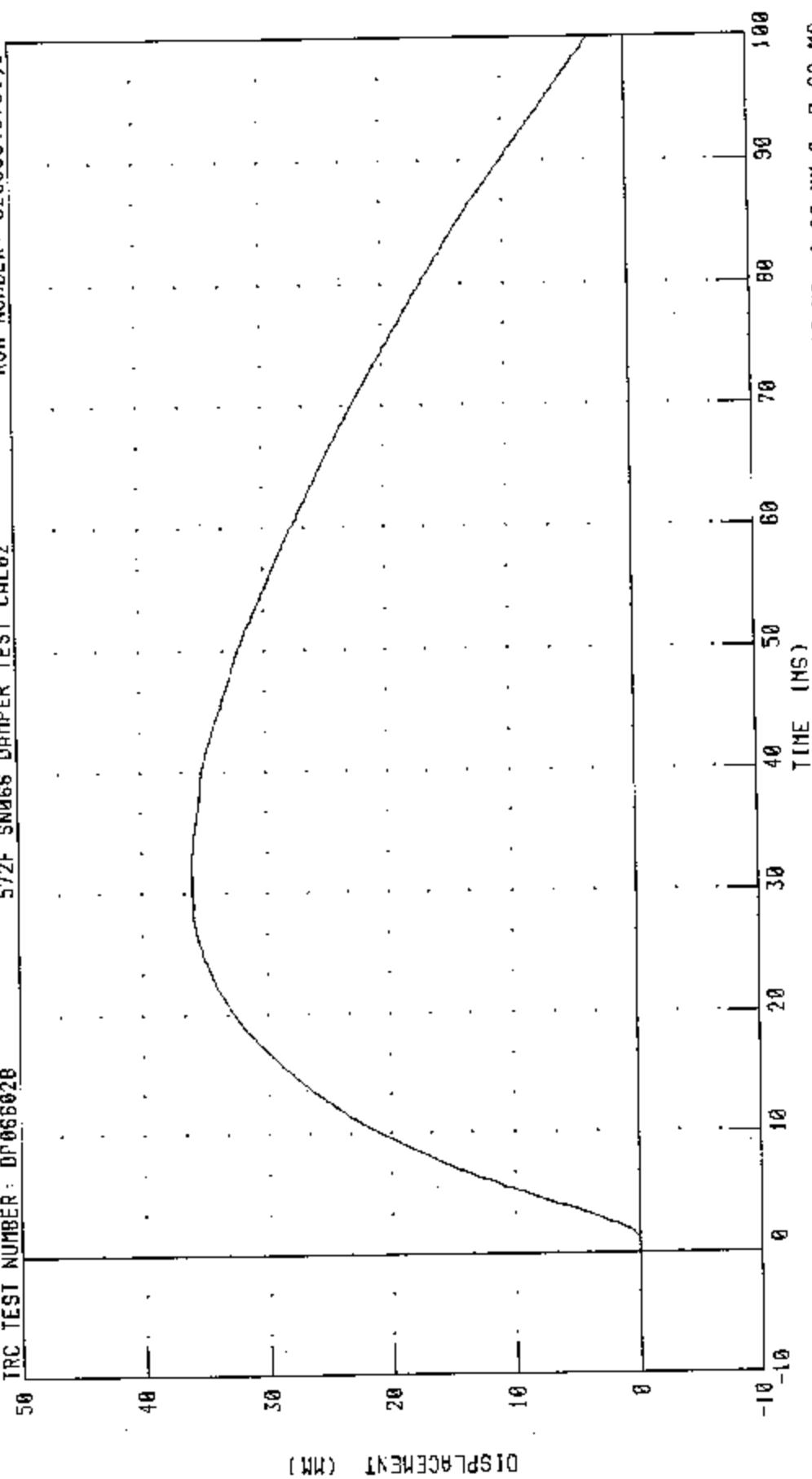
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER DISPLACEMENT

572F SN066 DAMPER TEST CAL02

TRC TEST NUMBER: DP066020

RUN NUMBER: 020303.0731;1



PEAK DATA: 35.94 MM @ 31.12 MS; 0.00 MM @ -7.68 MS

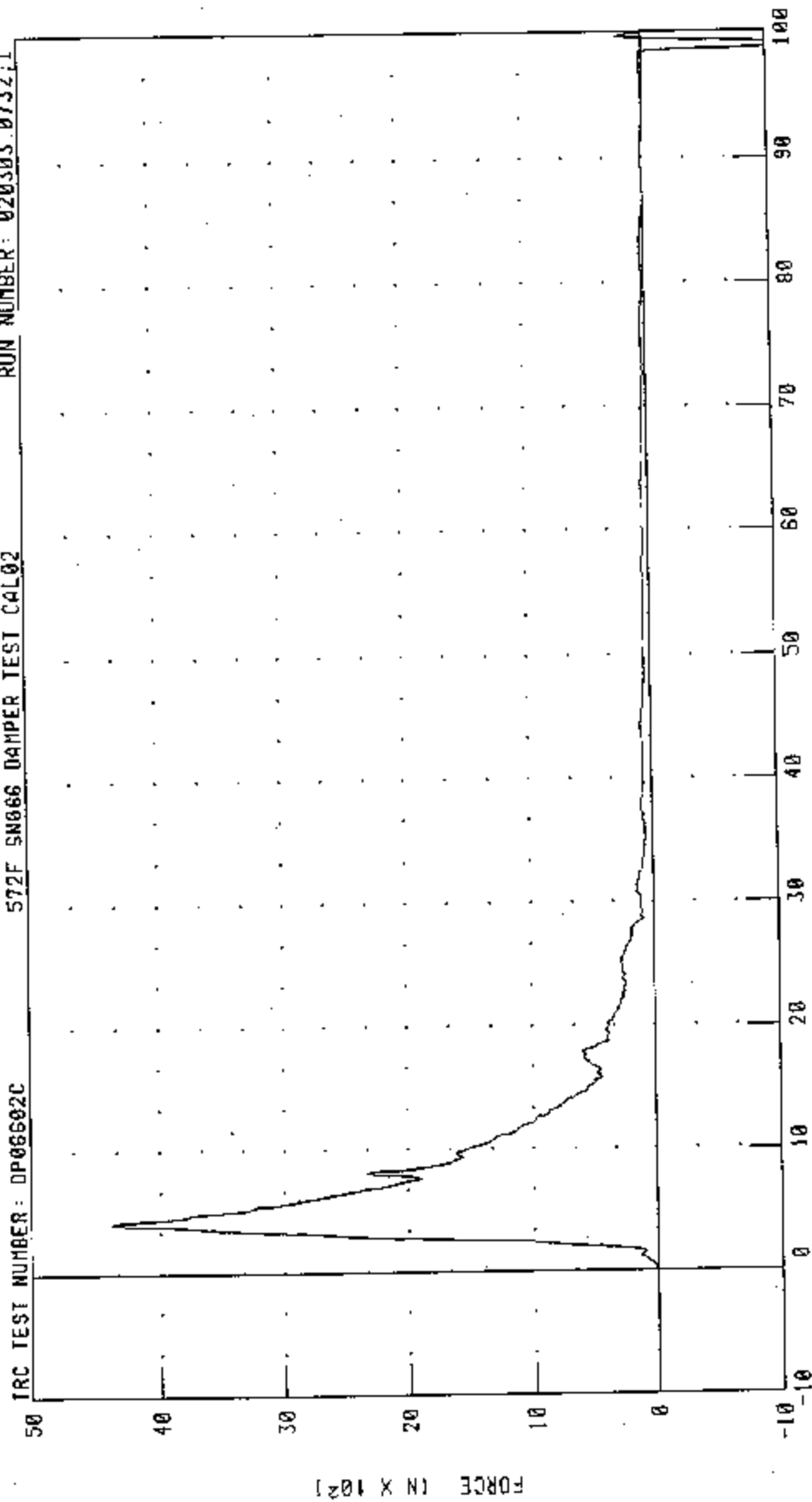
CHANNEL: CSTYD FILTER: CH. CLASS 1000

PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 N/SEC)

SHOCK ABSORBER RESISTIVE FORCE

572F SN066 DAMPER TEST CAL02

RUN NUMBER: 020303.0732.1



TIME (MS)

PEAK DATA: 4387.36 N @ 4.16 MS; -1635.66 N @ 98.88 MS

CHANNEL: DANPE FILTER: CH. CLASS 1000

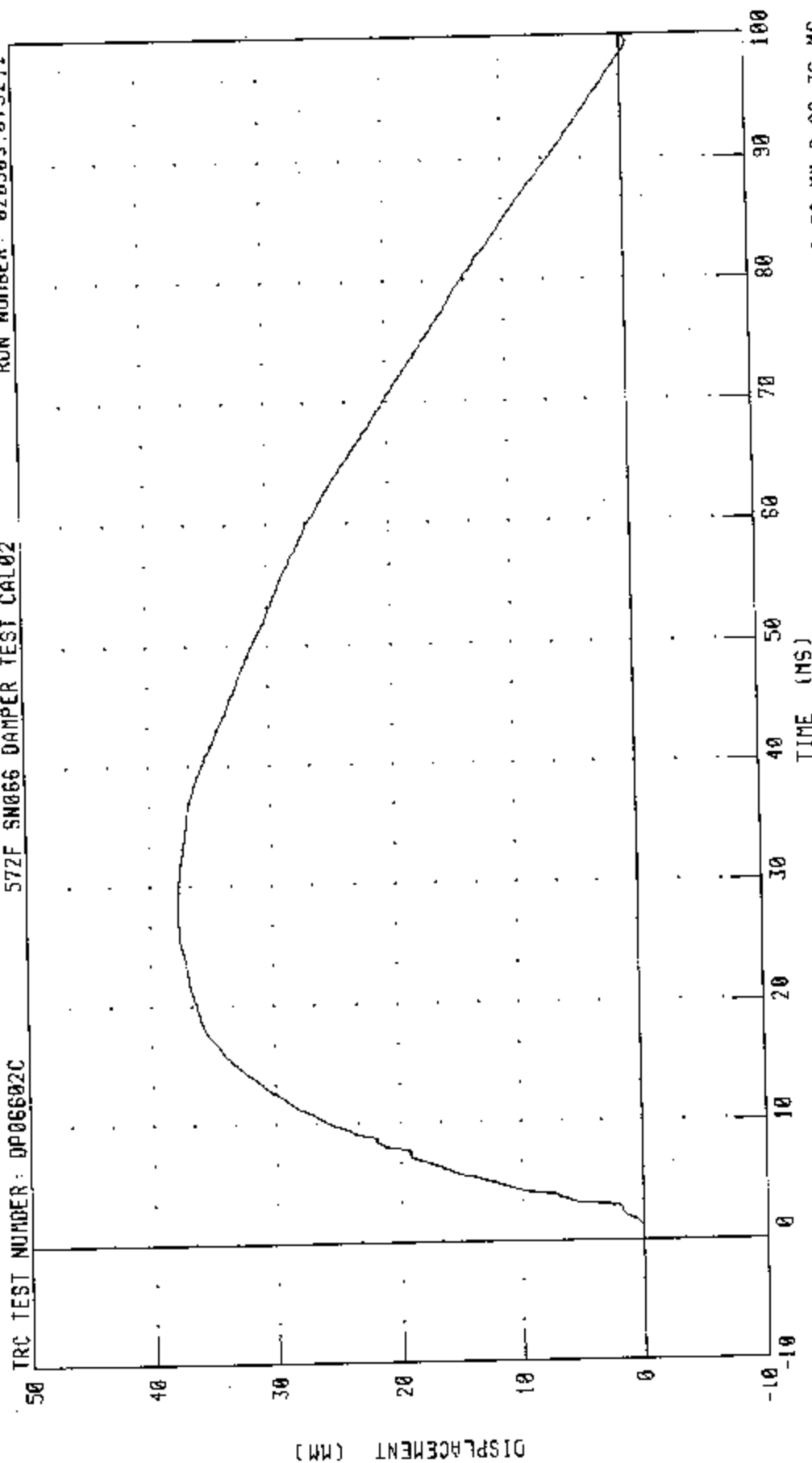
FORCE (N X 10<sup>2</sup>)

PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER DISPLACEMENT

572F SN066 DAMPER TEST CAL02

RUN NUMBER: 020303.0732.1



PEAK DATA: 37.76 MM @ 27.76 MS; -0.52 MM @ 99.36 MS

CHANNEL: CSTYD FILIER: CH. CLASS 1000

TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

SID PART 572B

CAL DATE: 27-Feb-03

TRC, INC.

TEST NO: 065C05TF1

572B SN 065 TORSO FLEX CAL 05

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6° C	21.1 °C
RELATIVE HUMIDITY	10 - 70 %	30 %
FORCE AT 0 DEG. FLEXION	-27 - 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 - 151 N	111.2 N
FORCE AT 30 DEG OF FLEXION	151 - 205 N	177.9 N
FORCE AT 40 DEG OF FLEXION	205 - 258 N	218.0 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	6 °

TEST MEETS SPECIFICATIONS

TECHNICIAN 

## TRANSPORTATION RESEARCH CENTER INC.

## LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

14-MAR-03

LEFT SIDE CONFIGURATION

TRC INC.

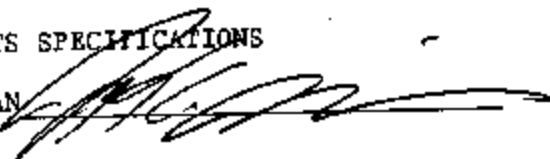
TEST NO: SPL06505

572F SNO65 LEFT PELVIS CAL05

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.28 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	52.1 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.0 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 031703.1305;1

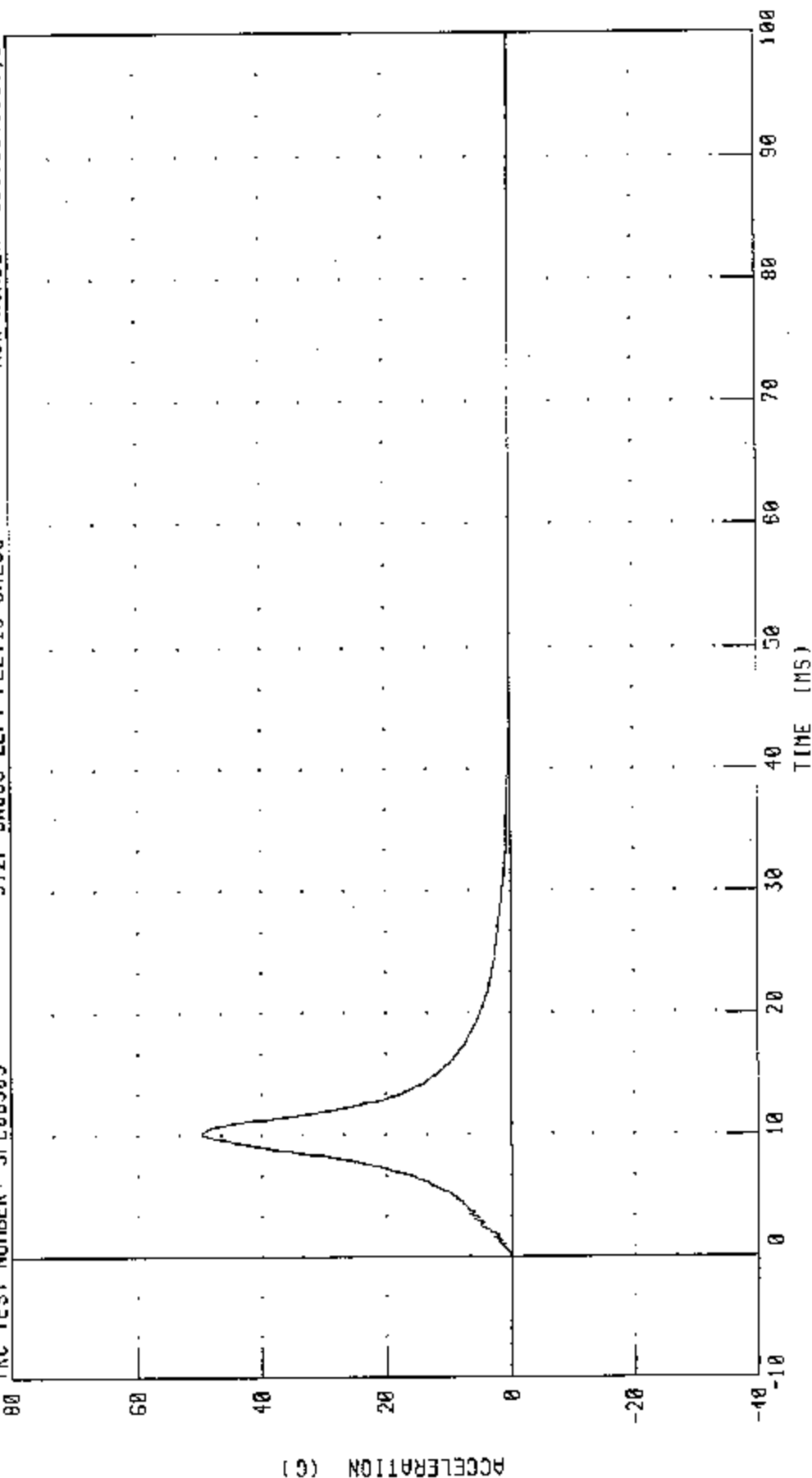
# PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: SPL06505

572F SN065 LEFT PELVIS CAL05

RUN NUMBER: 031703.1386.1



TIME (MS)

PEAK DATA: 49.76 G @ 10.16 MS; -0.22 G @ 63.68 MS

CHANNEL: PENXC FILTER: CH. CLASS 1000

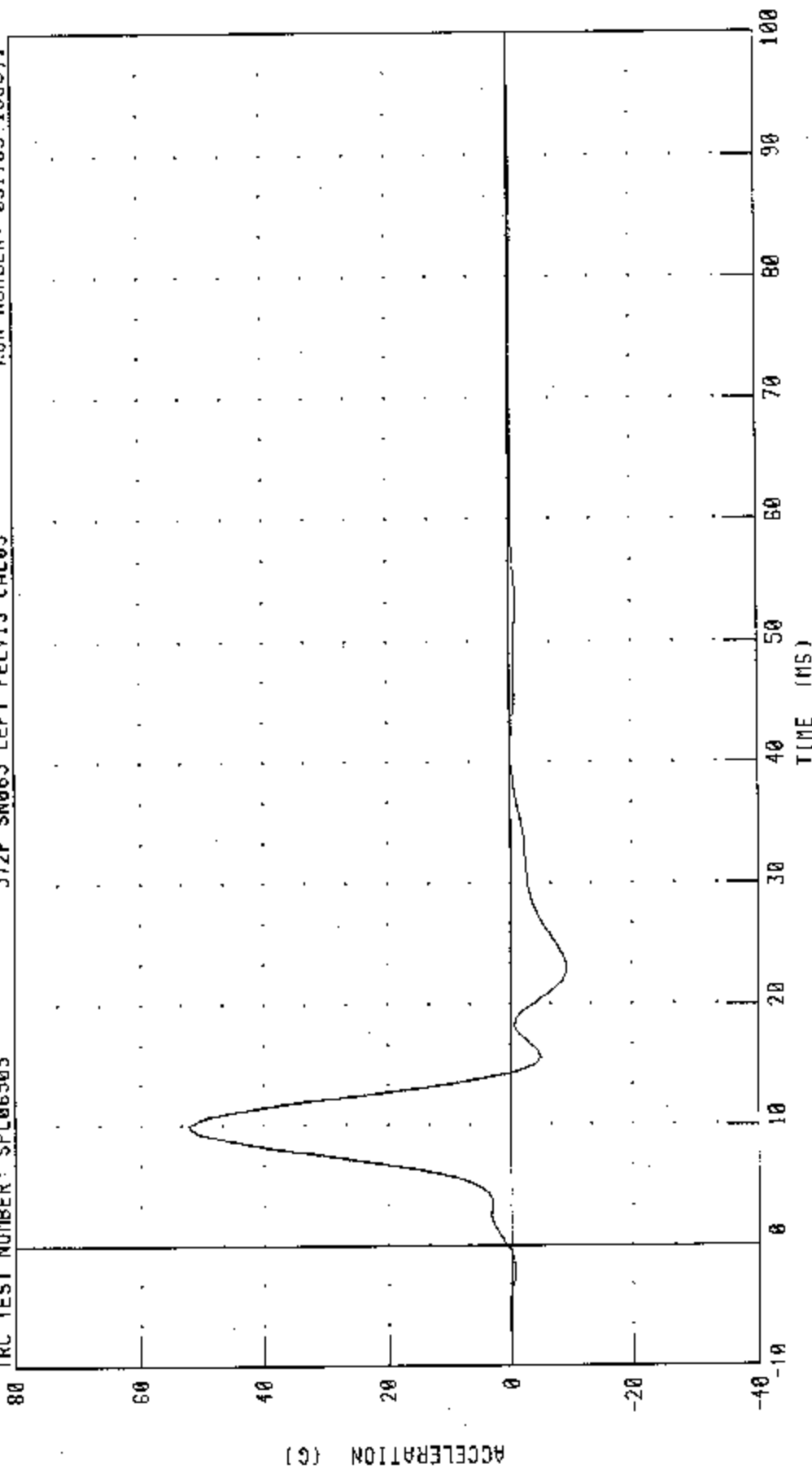
# PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

572F SN065 LEFT PELVIS CAL05

TRC TEST NUMBER: SPL06505

RUN NUMBER: 031703.1306.1



PEAK DATA: 52.06 G @ 10.00 MS, -9.37 G @ 23.13 MS

CHANNEL: PEVYC FILTER: FIR 100



Calibration Test Results

Post-Test

SID: 028

Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was not tested at this time.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.

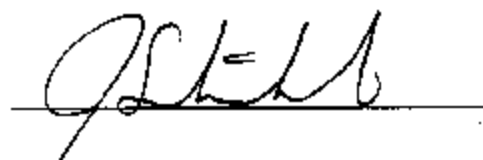
Transportation Research Center Inc.  
572F SID Dummy  
External Dimensions  
Serial No. 028 Calibration No. 03

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	898 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	506 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	235 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	513 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	499 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	374 mm	Yes
Top Rib Width From CVL	RW-1	165.1 - 180.3 mm	173 mm	Yes
Bottom Rib Width From CVL	RW-2	165.1 - 180.3 mm	172 mm	Yes
Difference Between Top & Bottom Rib Width from CVL		<= 2.5 mm	1.0 mm	Yes

Technician



Approved



**TRE**

## TRANSPORTATION RESEARCH CENTER INC.

## LATERAL HEAD DROP TEST

HYBRIDIII SID DUMMY

24-MAR-03

## LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. HDL02803

H3/SID SN028 HEAD DROP CAL03

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.67 deg. C
RELATIVE HUMIDITY	10 - 70 %	44.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	147.14 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	-7.01 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 032403.1232;1

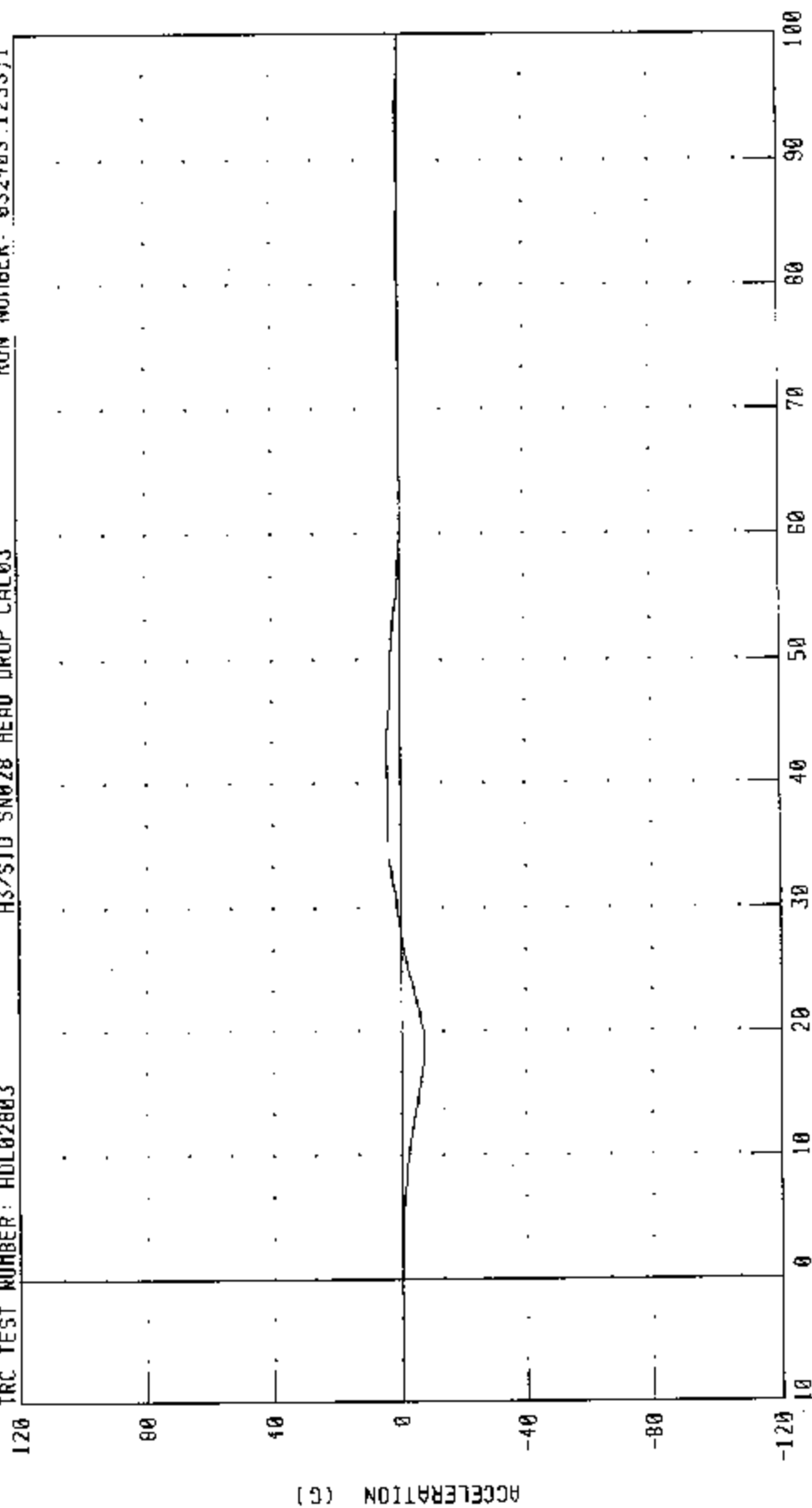
BIOSIO DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

IRC TEST NUMBER: HDL02803

H3/SID SN028 HEAD DROP CAL03

RUN NUMBER: 032403.1233,1



PEAK DATA: 4 39 G @ 4.32 MS, -7 01 G @ 1.84 MS

CHANNEL HE0XG FILTER: CH. CLASS 1000

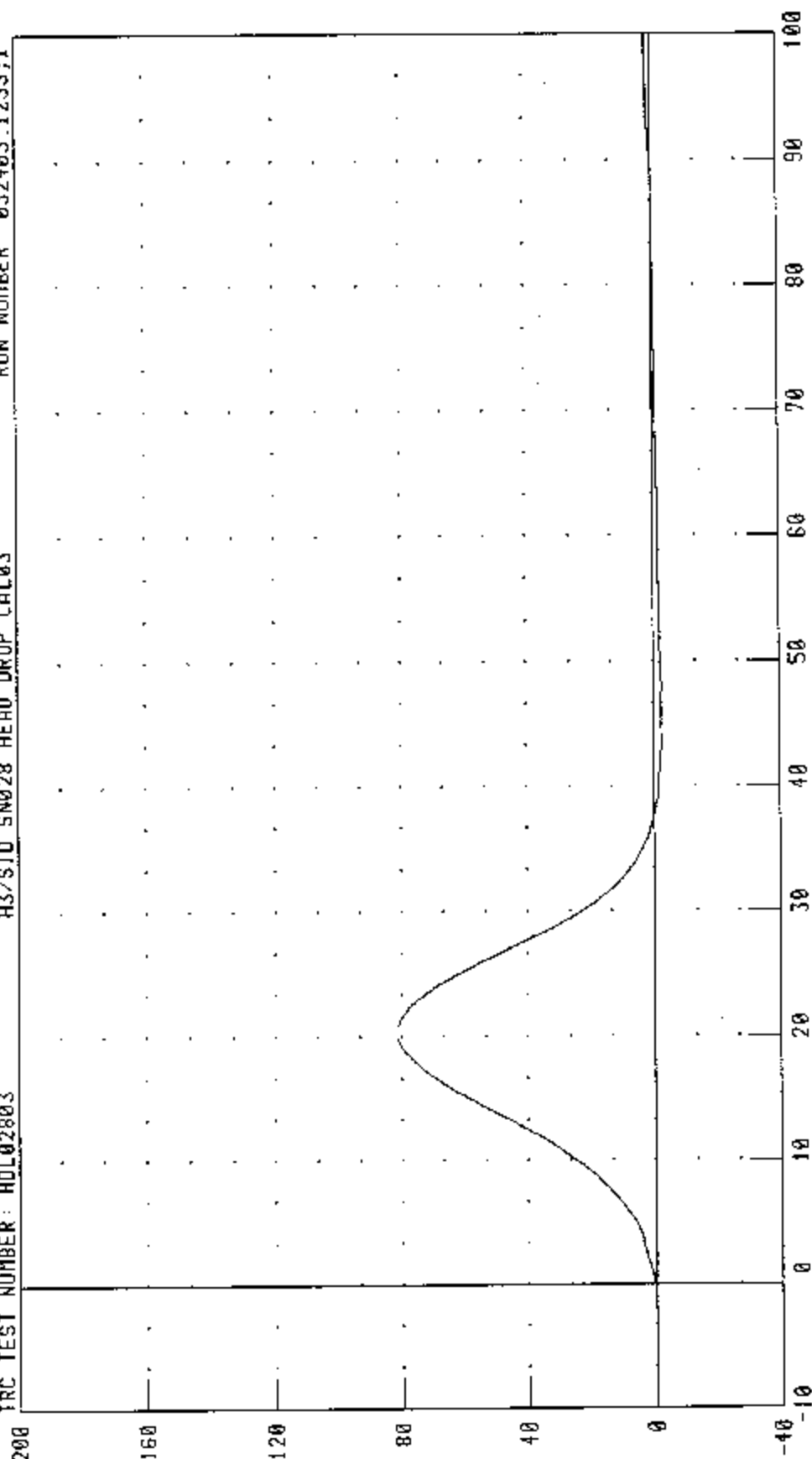
# BIOSIO DUMMY CALIBRATION 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Y AXIS

RUN NUMBER 032403.1233;1

H3/S10 SN028 HEAD DROP CAL03

IRC TEST NUMBER: HDL02803



TIME (MS X 10<sup>-1</sup>)

PEAK DATA: 01.49 C @ 2.00 MS, -2.70 C @ 4.80 MS

CHANNEL: HEDYG FILTER: CH CLASS 1000

ACCELERATION (G)

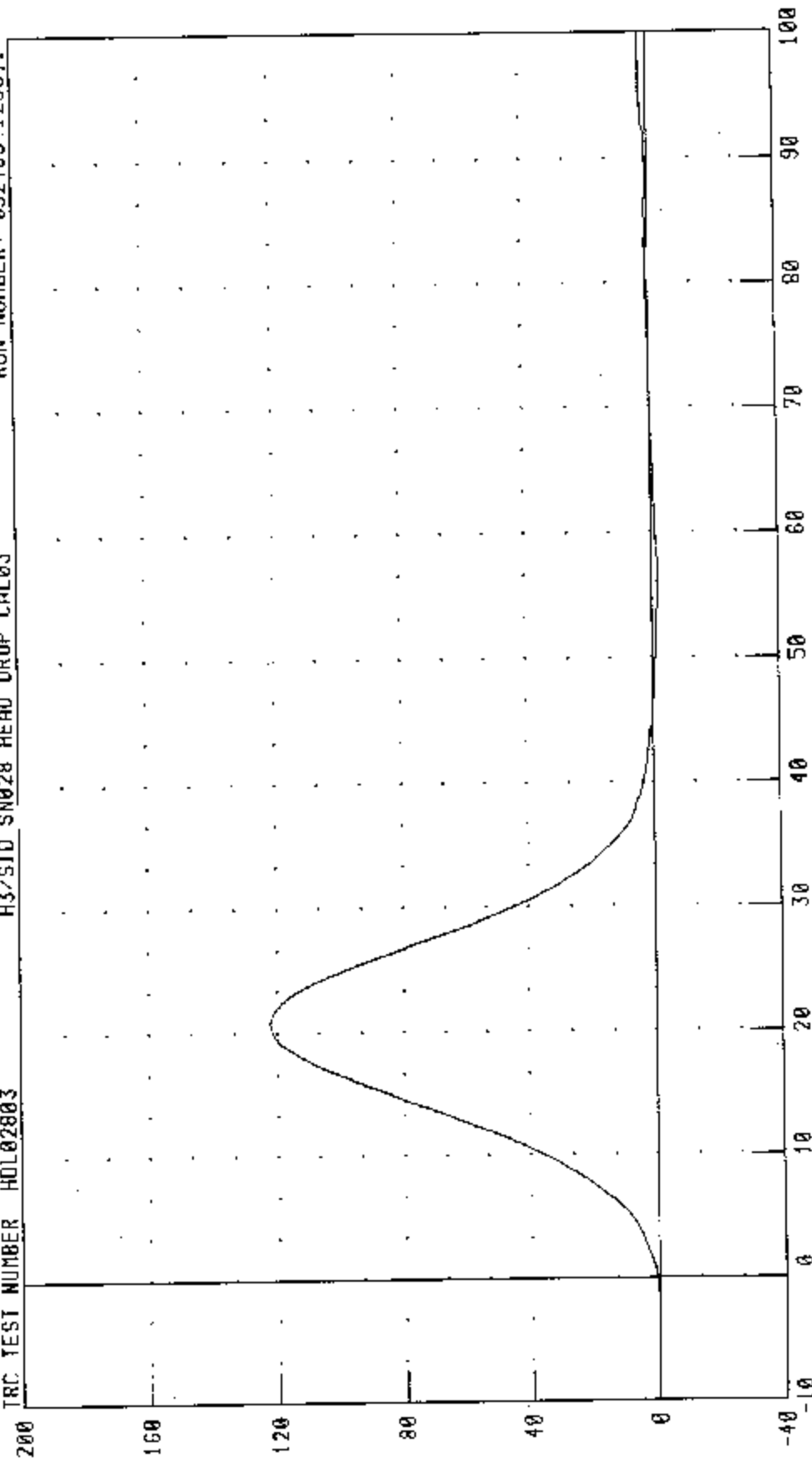
BIOSIO DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Z AXIS

RUN NUMBER: 032403.1233.1

H3/SID SN028 HEAD DROP CAL03

TRC TEST NUMBER H0102803



PEAK DATA: 122.41 G @ 2.08 MS; 2.10 G @ 5.76 MS

CHANNEL: HEDZG FILTER: CH CLASS 1000

ACCELERATION (G)

030317-2

C-76

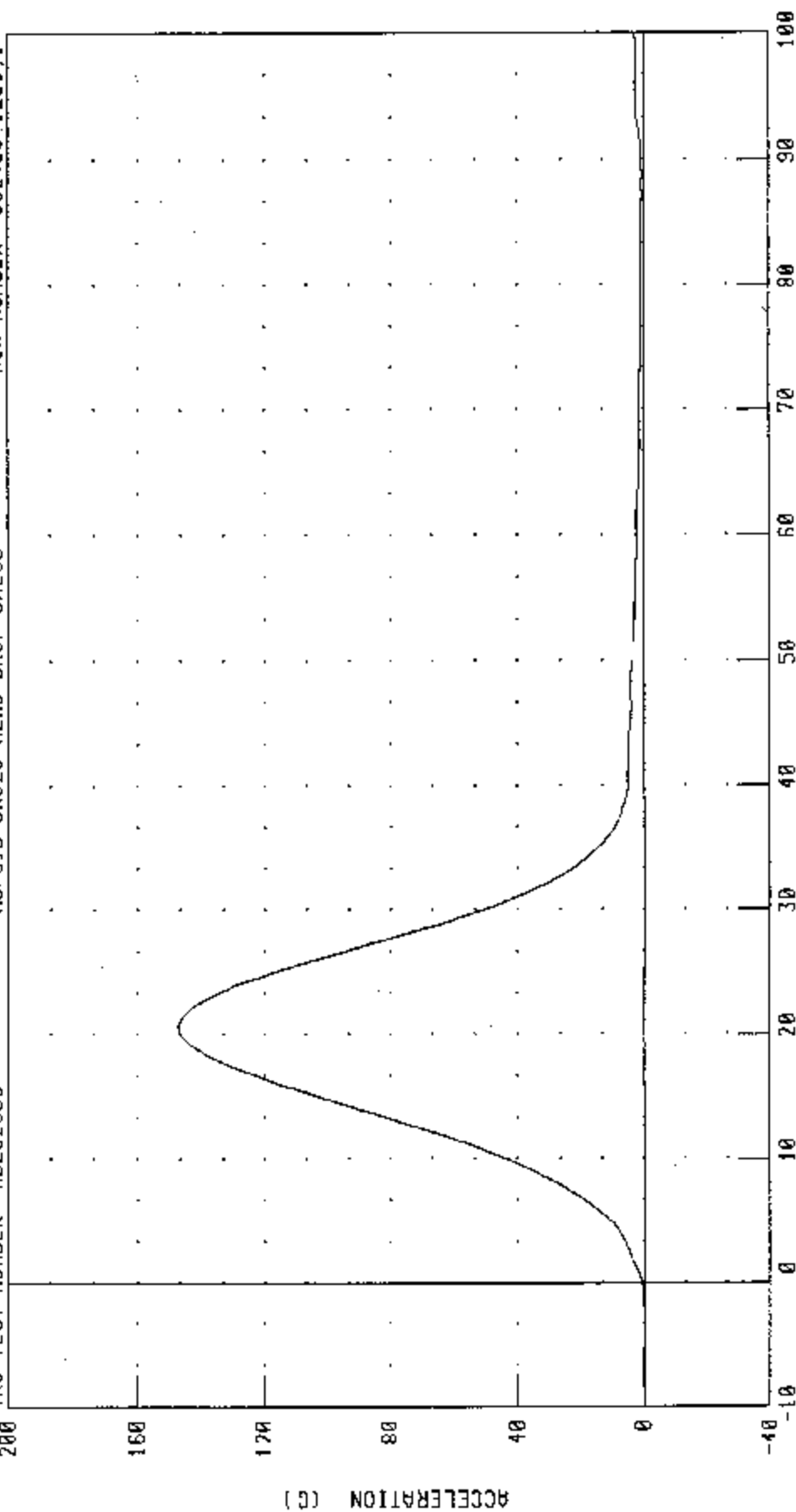
# BIOSID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD RESULTANT ACCELERATION

H3/SID SN028 HEAD DROP CAL03

TRC TEST NUMBER: HDL02803

RUN NUMBER: 032403.1233,1



TIME (MS X 10<sup>-1</sup>)

CHANNEL: HEDRG FILTER: CH CLASS 1000

PEAK DATA: 147 14 C B 2 08 MS; 0 03 C 0 -0 40 MS

## TRANSPORTATION RESEARCH CENTER INC.

## LATERAL NECK TEST

HYBRIDIII SID DUMMY

25-MAR-03

## LEFT SIDE CONFIGURATION

TRC INC.

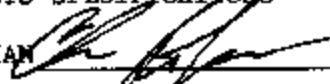
TEST NO. NFL02803

H3/SID SNO28 NECK LEFT CAL03

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 - 22.2 deg. C	21.67 deg. C
RELATIVE HUMIDITY	10 - 70 %	43.00 %
IMPACT VELOCITY	6.89 - 7.13 M/S	7.06 M/S
INTEGRATED VELOCITY	10 MS   1.96 - 2.55 M/S	2.32 M/S
	20 MS   4.12 - 5.10 M/S	4.55 M/S
	30 MS   5.73 - 7.01 M/S	6.43 M/S
	40 - 70 MS   6.27 - 7.64 M/S	7.16 - 7.29 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION	66 - 82 deg.	69.00 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO	58 - 67 MS	59.20 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE	73 - 88 NM	83.15 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO	49 - 64 MS	52.56 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT	2 - 16 MS	9.04 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



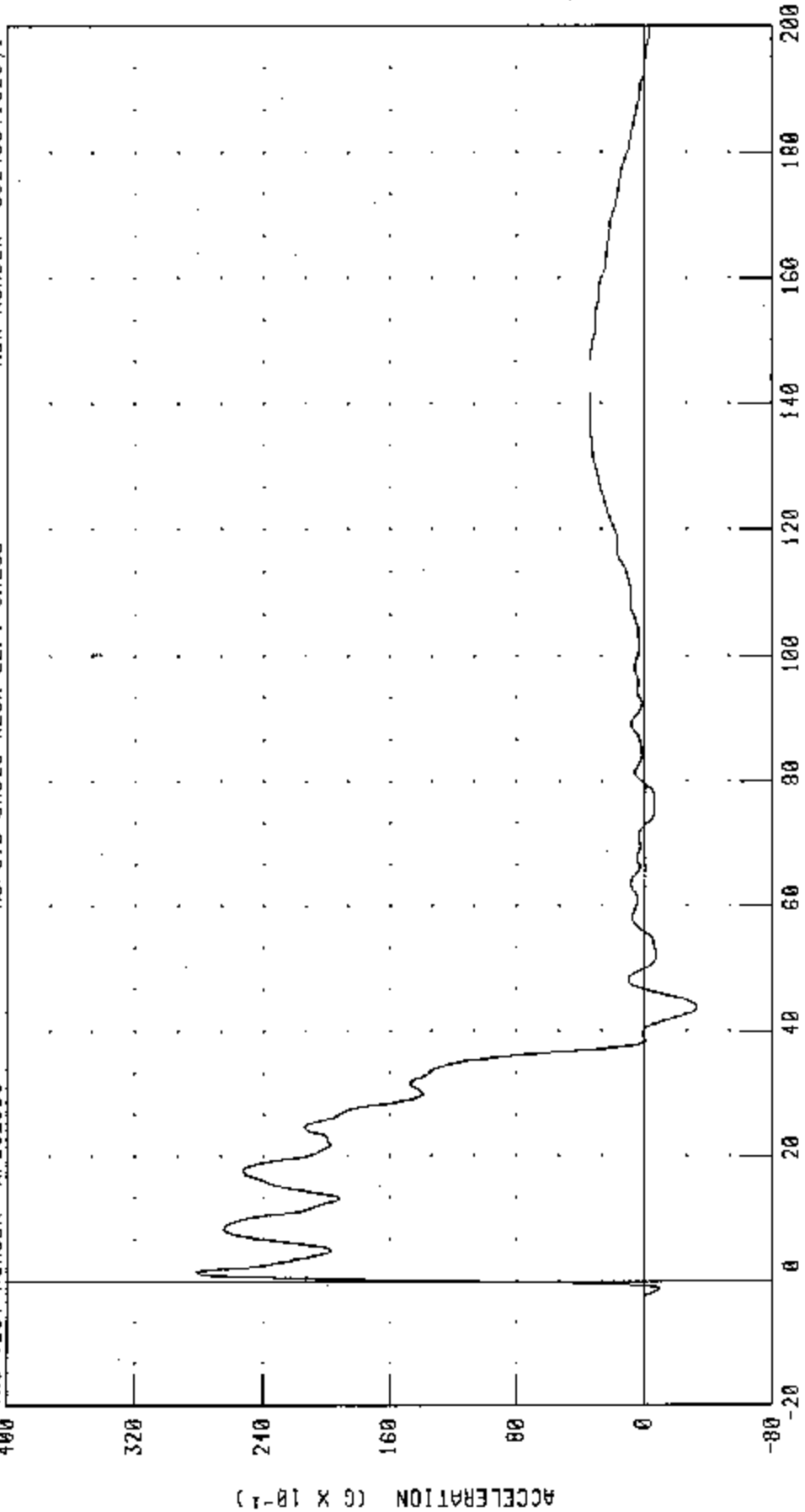
RUN NUMBER: 032403.1322;1



# 113/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

PENDULUM DECELERATION

TRC TEST NUMBER: NFO2803 H3/SID SN028 NECK LEFT CAL03 RUN NUMBER: 032403.1323.1



CHANNEL: PENXC FILTER: CH. CLASS 130 PEAK DATA: 28 13 G 0 1.44 MS; -3.29 G 0 44.00 MS

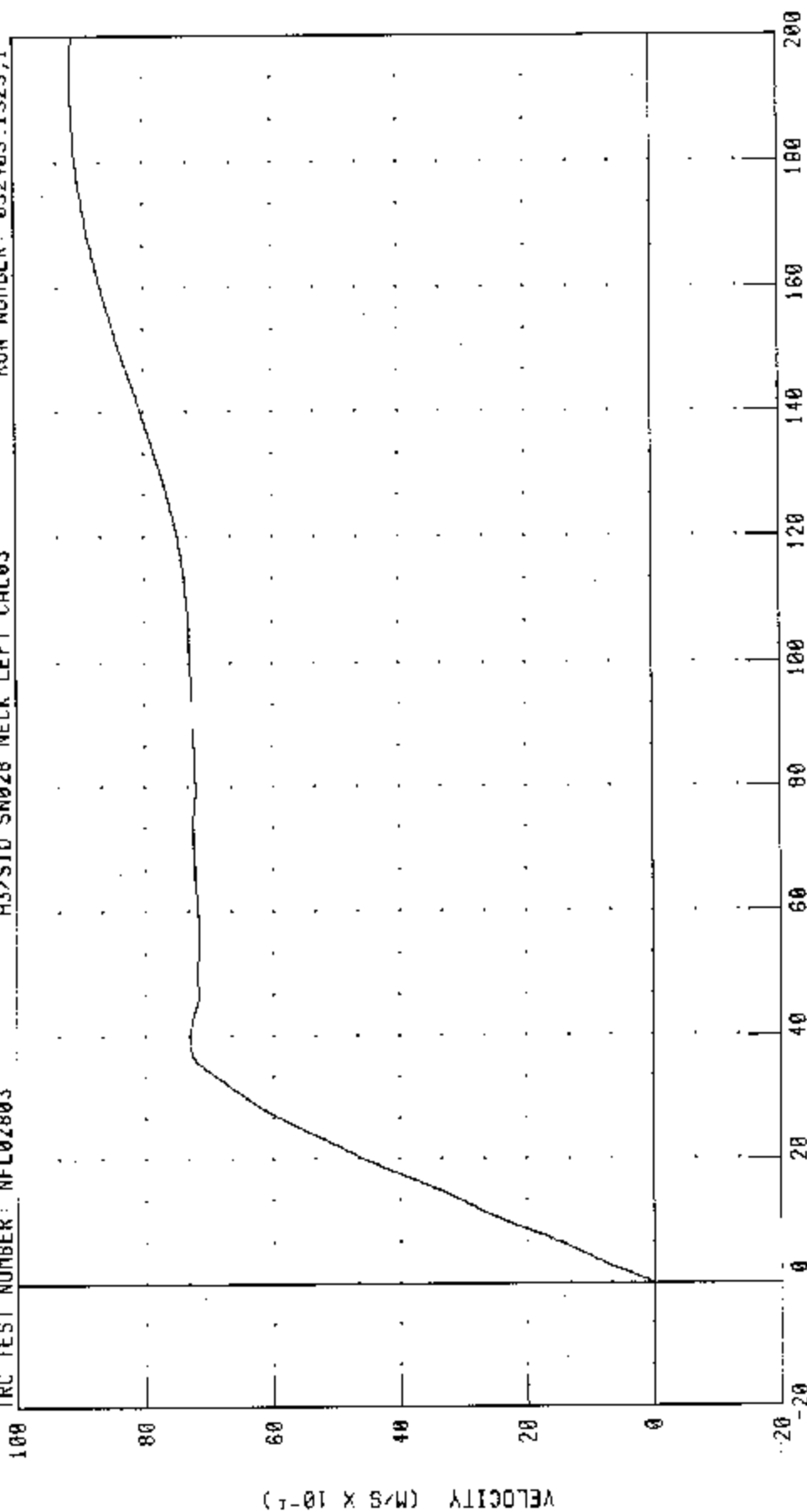
# H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

INTEGRATED PENDULUM VELOCITY

TRC TEST NUMBER: NFL02803

H3/SID SN020 NECK LEFT CAL03

RUN NUMBER: 032403.1323;1



TIME (MS)

PEAK DATA: 9.11 MS @ 93.44 MS; -0.01 MS @ -0.72 MS

CHANNEL: PENXXVI FILTER: CH. CLASS 180

# H13/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

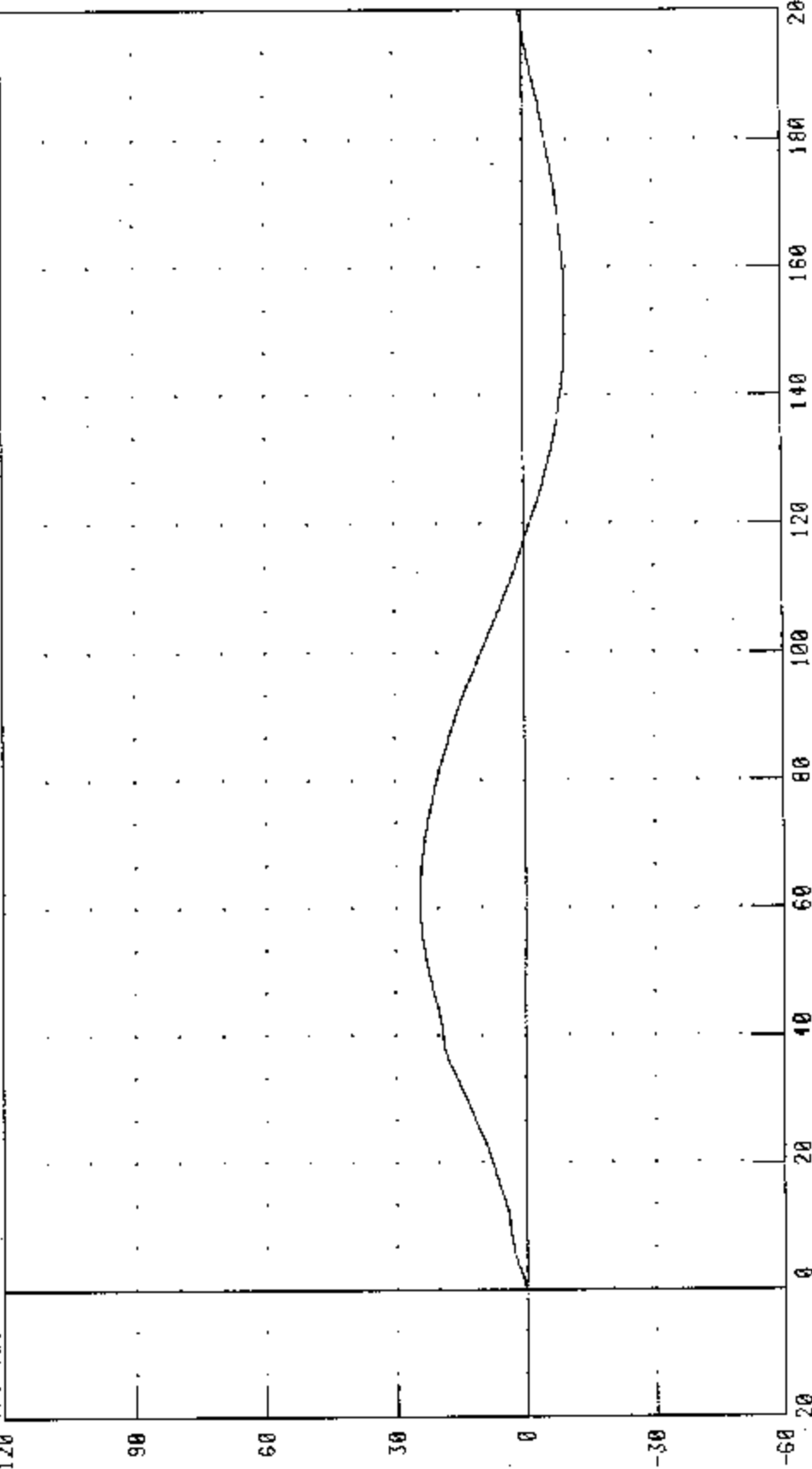
ROTATION ABOUT BASE OF NECK

RUN NUMBER: 032403.1323.1

H3/SID SN028 NECK LEFT CAL03

TAC TEST NUMBER: NPL02803

120



TIME (MS)

PEAK DATA: 24.39 ° @ 61.36 MS; -9.84 ° @ 150.80 MS

CHANNEL BETA FILTER: CH. CLASS 60

ANGLE (°)

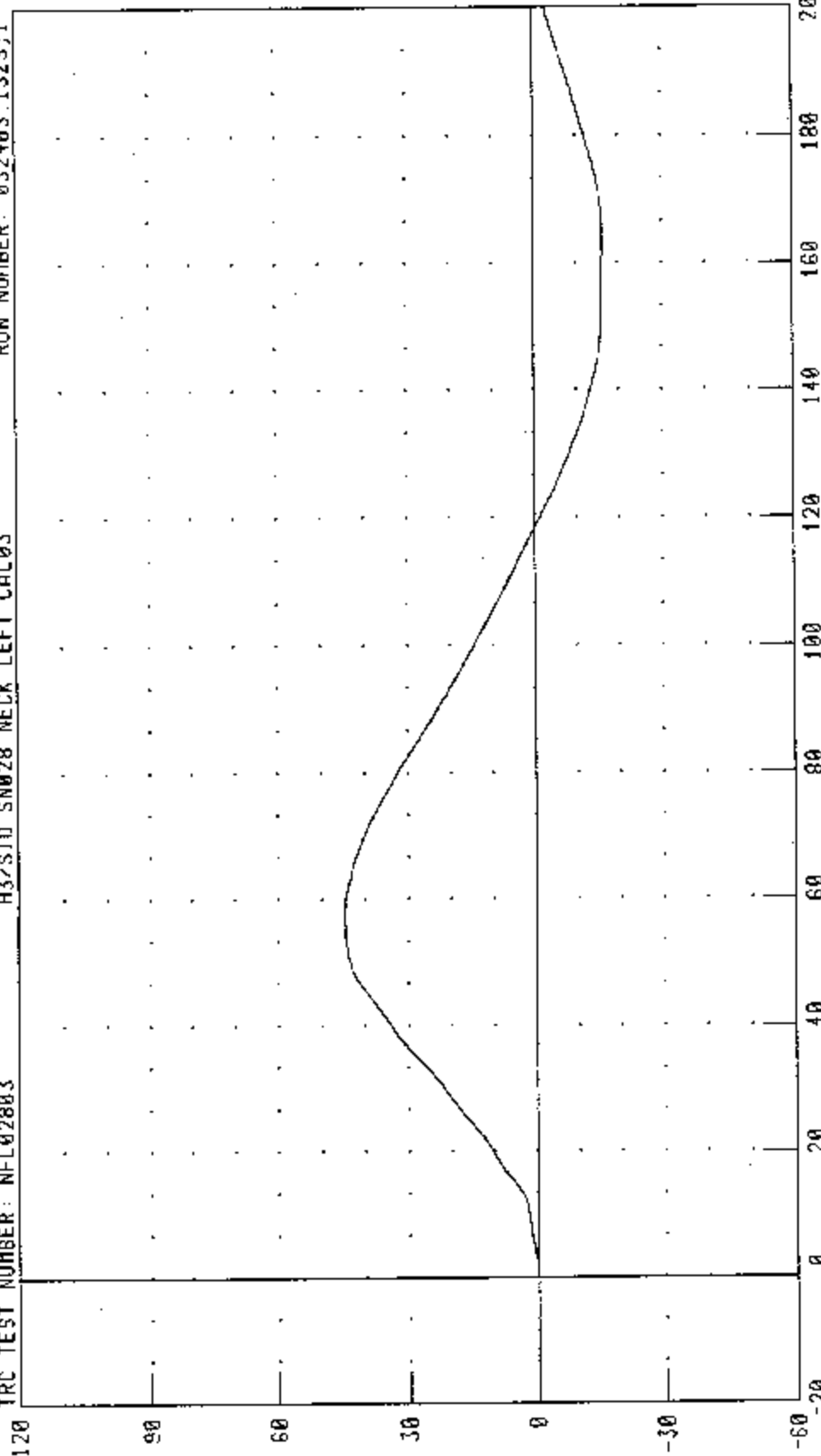
# H3/S10 DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT OCCIPITAL CONDYLE

H3/S10 SN028 NECK LEFT CAL03

TRC TEST NUMBER: NFL02803

120



PEAK DATA: 44.79 ° @ 57.44 MS, -16.22 ° @ 164.88 MS

CHANNEL: THE1A FILTER: CH. CLASS 60

ANGLE (°)

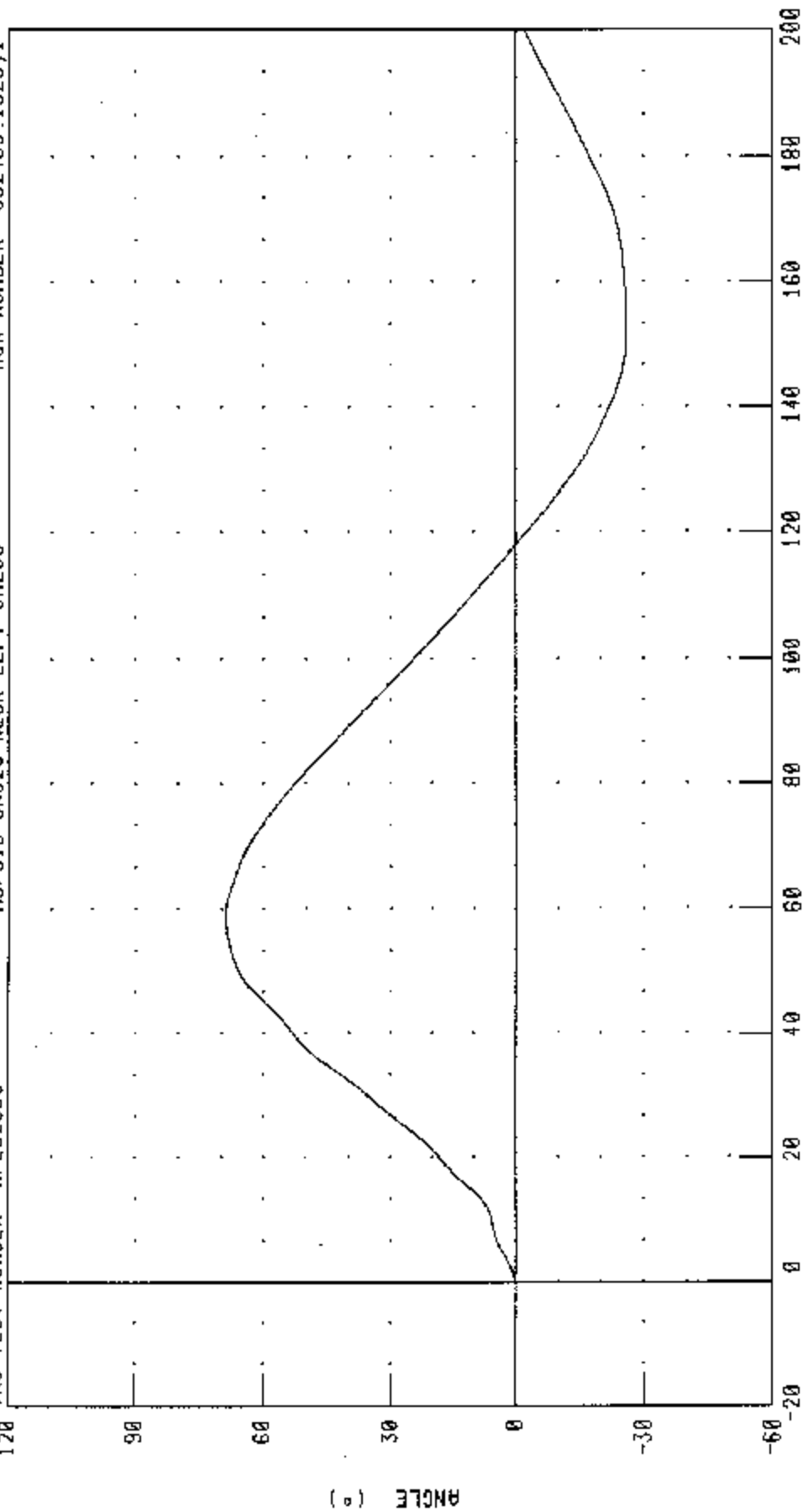
# H3/SID DUMMY CALIBRATION LEFT LATERAL NECK TEST

TOTAL ROTATION

IRC TEST NUMBER: NFL02803

H3/SID SN020 NECK LEFT CAL03

RUN NUMBER: 032403.1323;1



CHANNEL: TOTAL FILTER: CH. CLASS 60

PEAK DATA: 65.00 ° @ 58.80 MS; -26.00 ° @ 151.60 MS

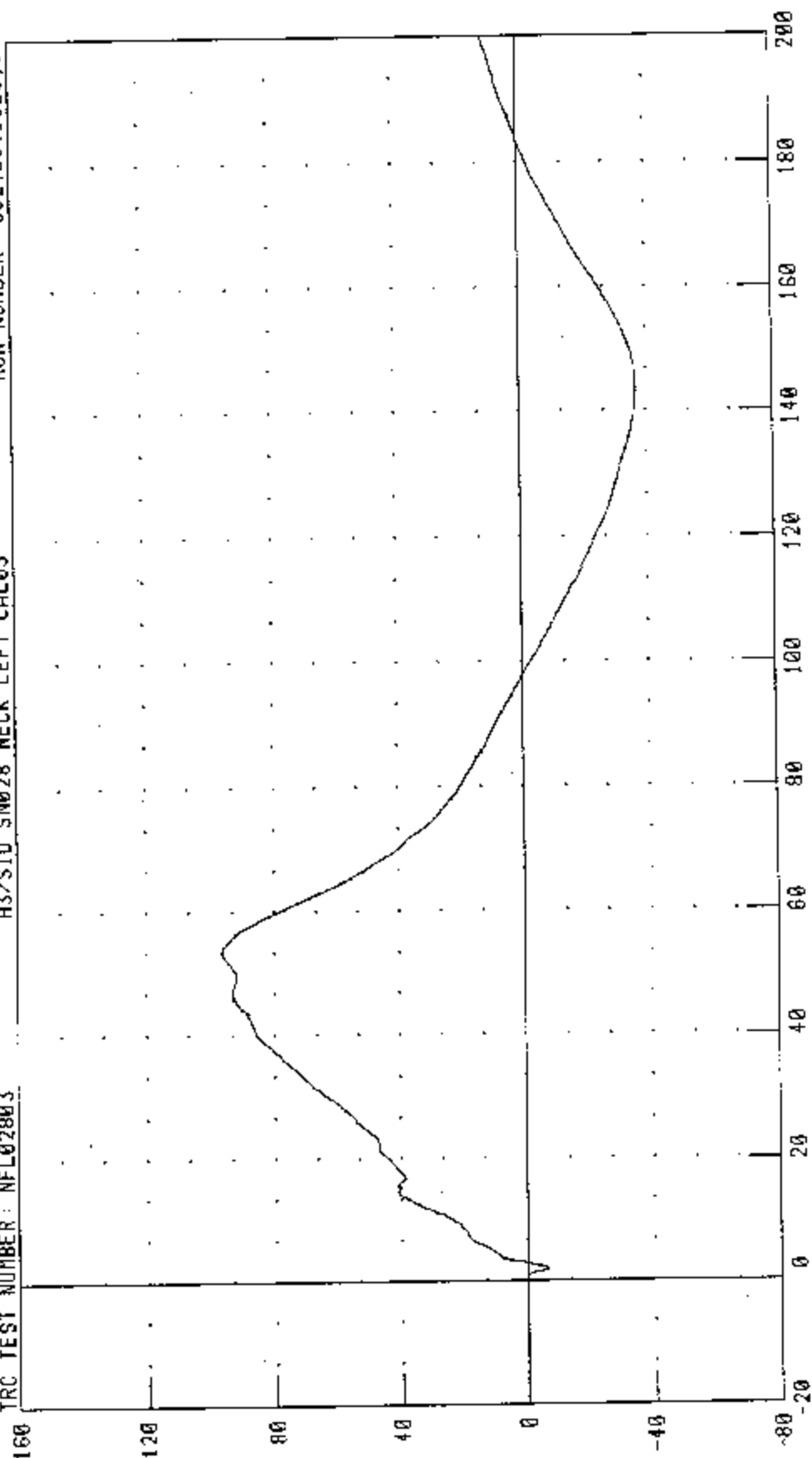
# H3/SID DUNNY CALIBRATION -- LEFT LATERAL NECK TEST

NECK FORCE Y AXIS

RUN NUMBER: 032403.1323;1

H3/SID SN028 NECK LEFT CAL03

TRC TEST NUMBER: NFL02803



FORCE (N X 10<sup>1</sup>)

TIME (MS)

PEAK DATA 966.31 N @ 53.52 MS; -369.27 N @ 143.04 MS

CHANNEL MEKVF FILTER: CH. CLASS 1000

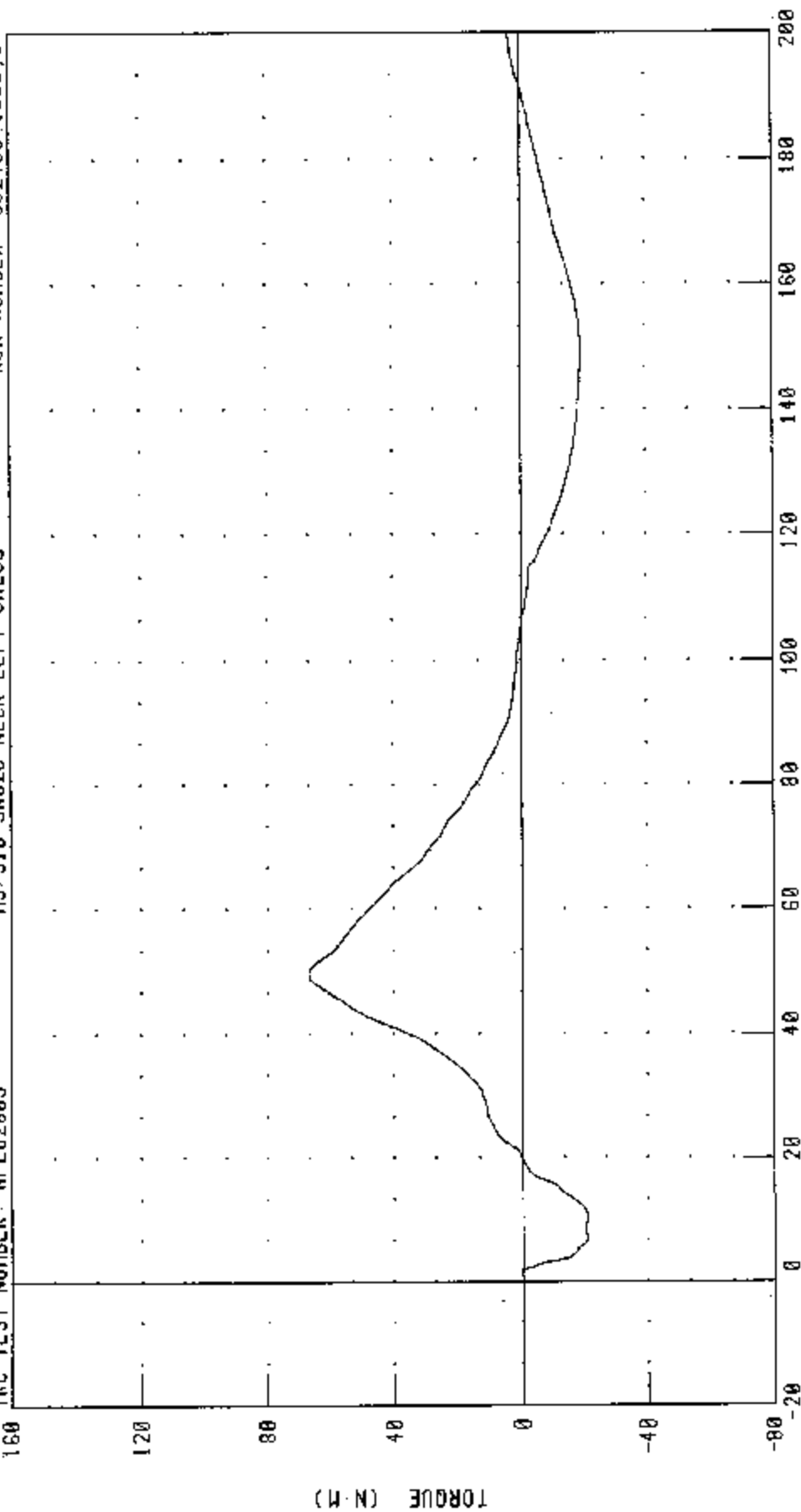
# 113/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK MOMENT X AXIS

RUN NUMBER: 032403.1323.1

H3/SID SN028 NECK LEFT CAL03

IRC TEST NUMBER: NFL02803



TIME (MS)

PEAK DATA: 66.78 N-M @ 49.76 MS, -20.52 N-M @ 0.96 MS

CHANNEL: NEKXN FILTER: CH. CLASS 600

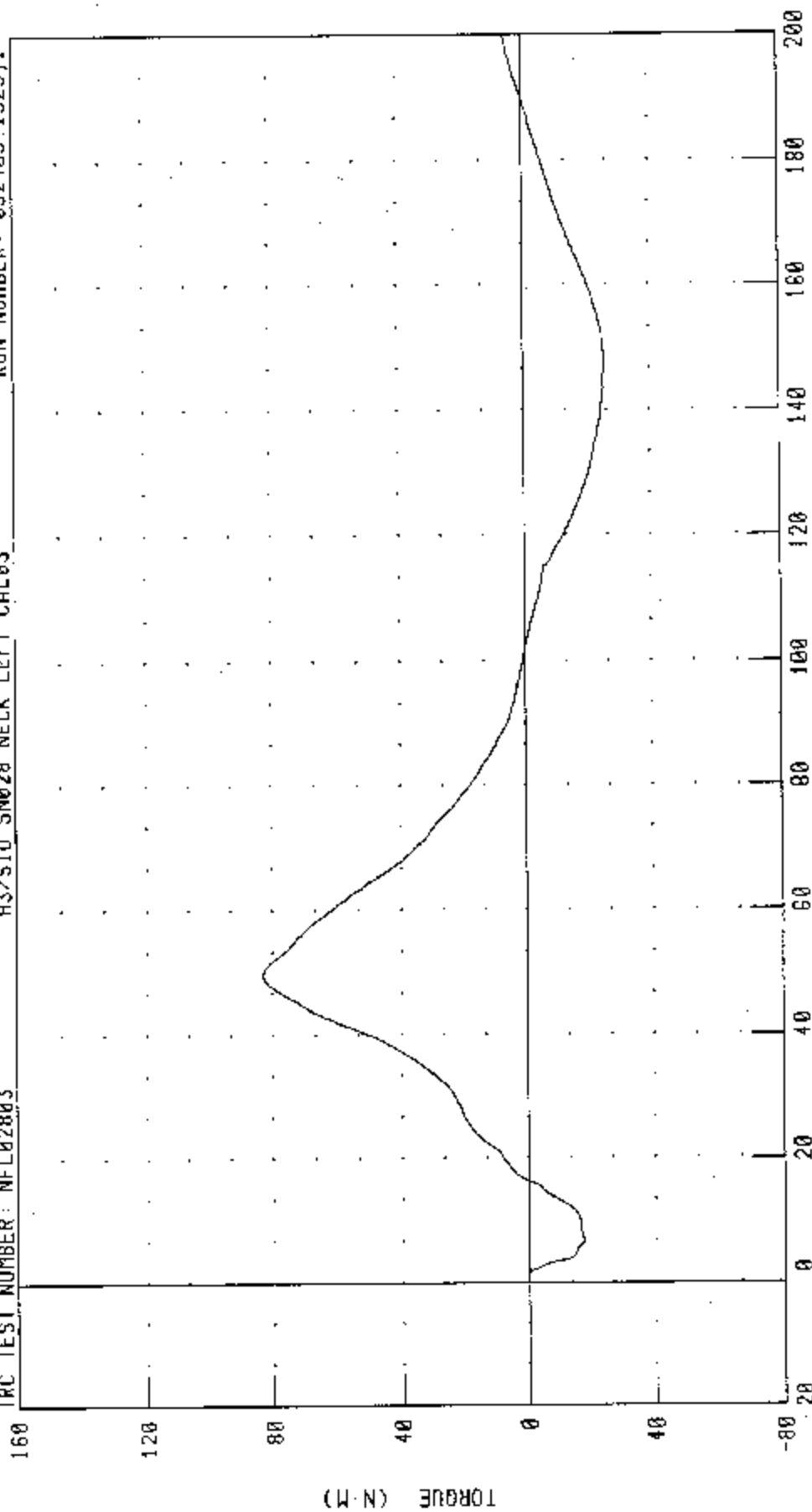
# H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

RUN NUMBER: 032403.1323.1

H3/SID SN028 NECK LEFT CAL03

TRC TEST NUMBER: NFL02803



TIME (MS)

PEAK DATA: 83.15 N M @ 49.76 MS. -25.83 N M @ 147.52 MS

CHANNEL: NEKOM FILTER: CH. CLASS 600



## TRANSPORTATION RESEARCH CENTER INC.

## LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

21-MAR-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: STL02803A

572F SID SN028 L.THORAX CAL03

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	46.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.27 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	39.2 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	38.5 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	17.4 G

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 032103.1310;1

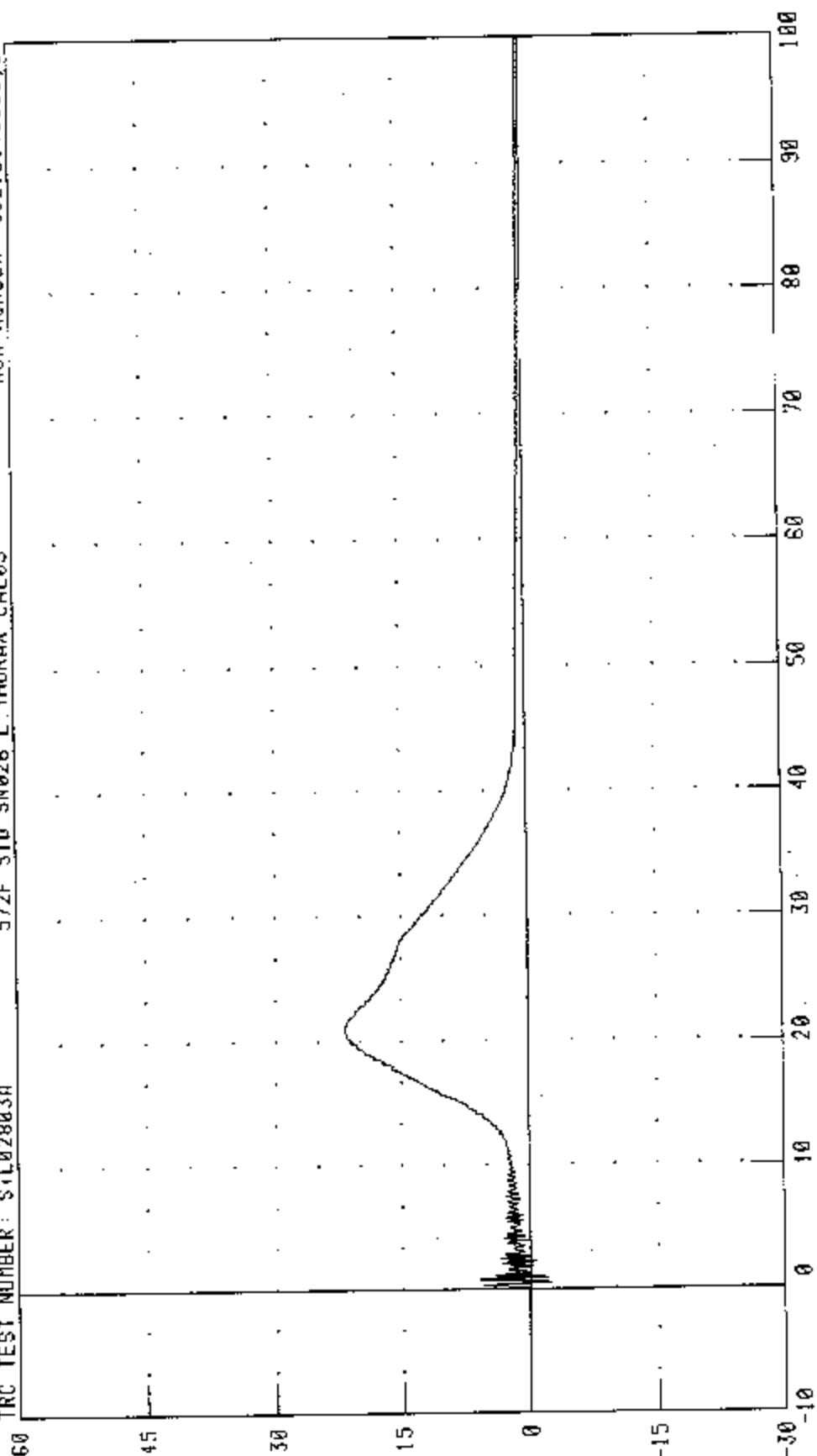
PART 572-F S.I.O. THORAX CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: STL02803A

572F SID SN028 L THORAX CAL03

RUN NUMBER: 032103.1311.1



PEAK DATA: 21.79 G @ 20.80 MS; -2.30 G @ 0.40 MS

CHANNEL: PENXG FILTER: CH. CLASS 1000

(G) ACCELERATION

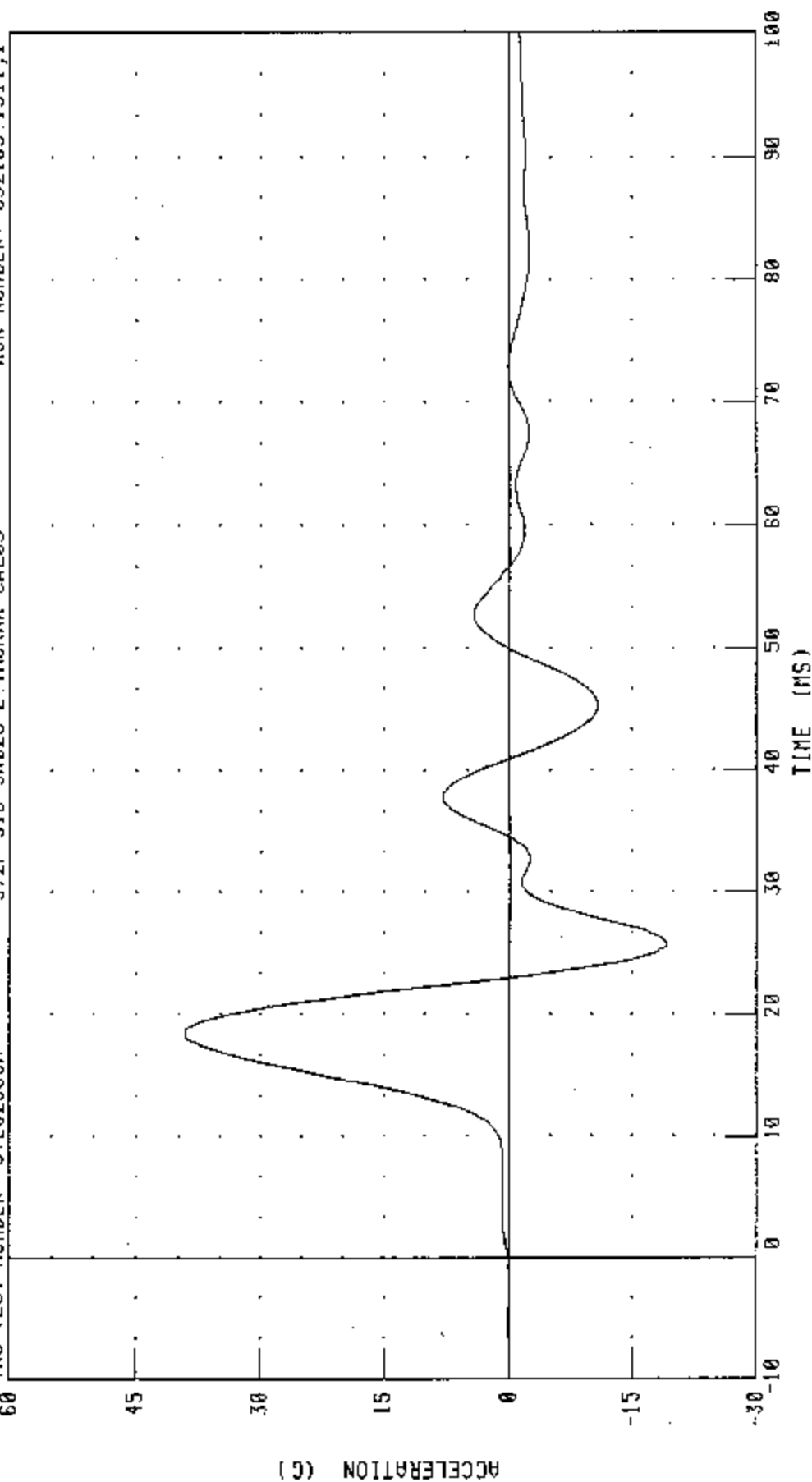
# PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT UPPER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL02803A

572F SID SN028 L THORAX CAL03

RUN NUMBER: 032103.1311.1



PEAK DATA: 39.23 G @ 18.75 MS; -19.33 G @ 25.63 MS

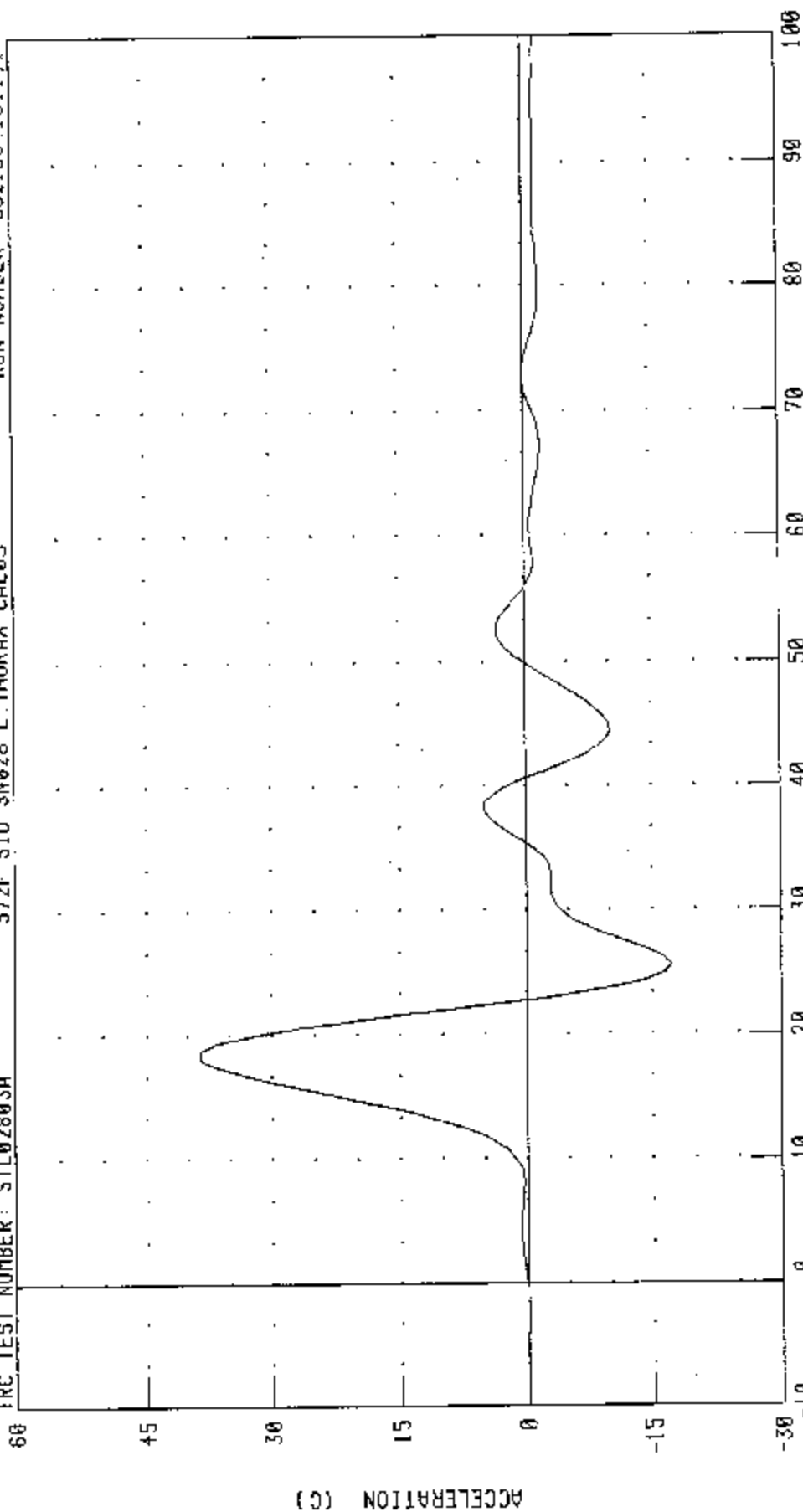
CHANNEL: LURYG FILTER: FIR 100

# PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT LOWER RIB ACCELERATION Y AXIS

572F SID SN028 L THORAX CAL03 RUN NUMBER: 032103.1311.1

IRC TEST NUMBER: STL02803A



ACCELERATION (G)

TIME (MS)

PEAK DATA 38.51 G @ 18.13 MS, 17.15 G @ 25.63 MS

CHANNEL: LLRYC FILTER: FIR 100

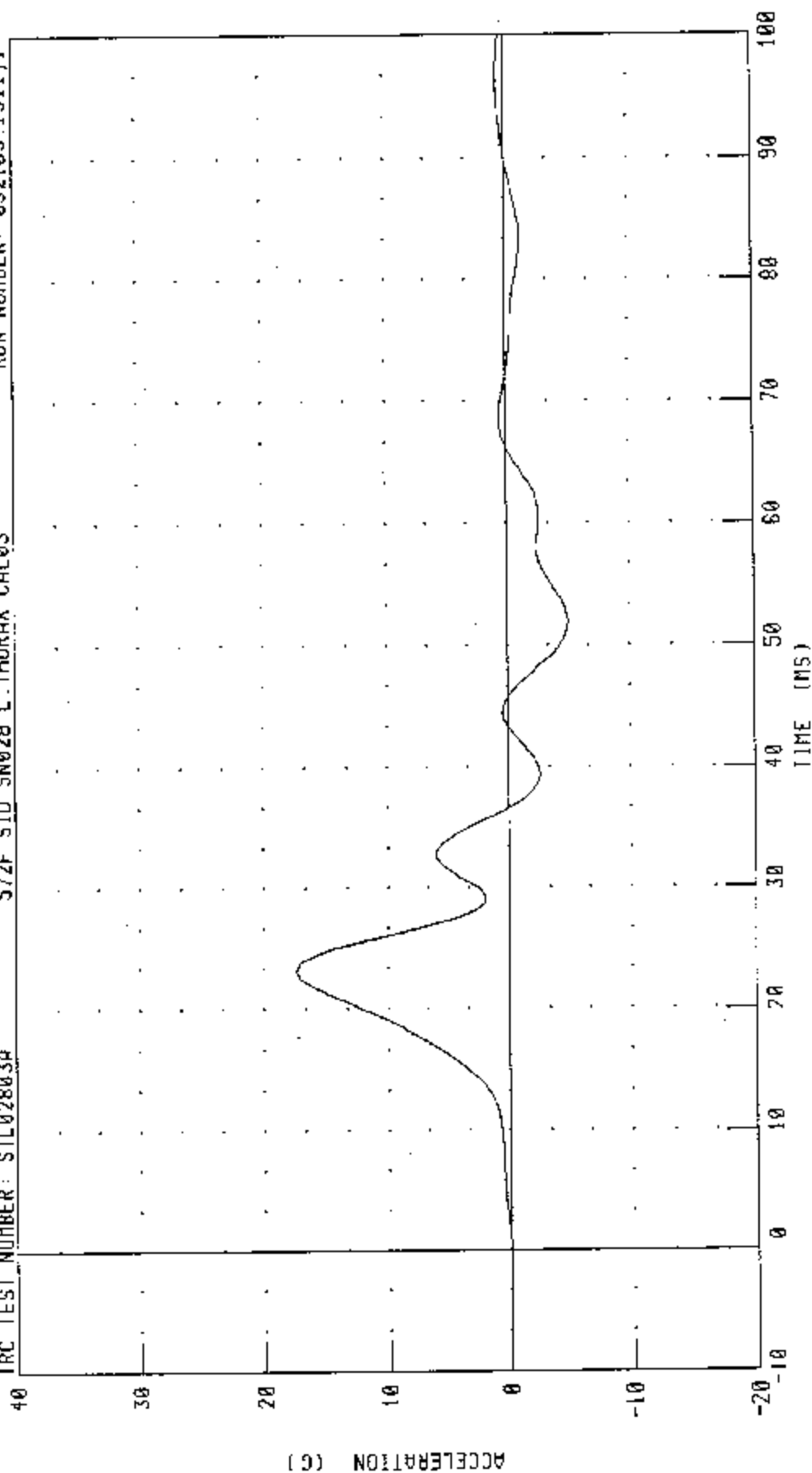
# PART 572-F S I D THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

572F SID SN028 L THORAX CAL03

TRC TEST NUMBER: STL02803A

RUN NUMBER: 032103.1311.1



PEAK DATA: 17 43 0 23 13 MS: -4.99 G @ 51 88 MS

CHANNEL: T12YC FILTER: FIR 100

# Transportation Research Center Inc.

572B Abdomen Compression Test

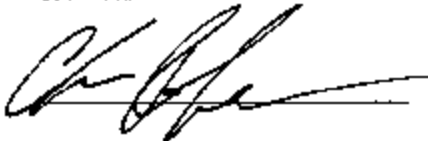
HIH SID Serial No. 028 Calibration No. 03 - 1

Test Date 03/24/2003

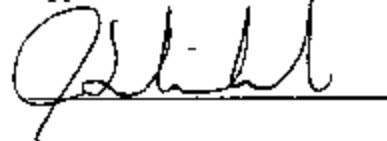
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	6.7 - 8.7 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician



Approved



03.24.2003 10:47:49 183

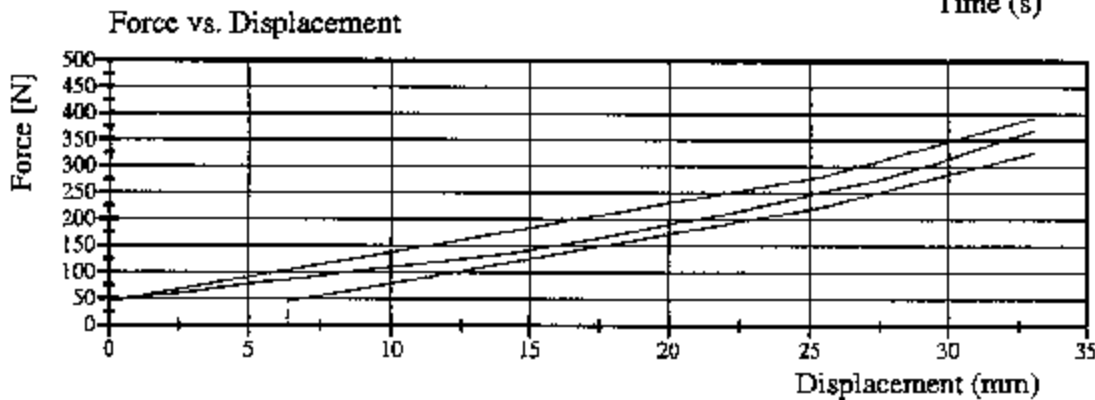
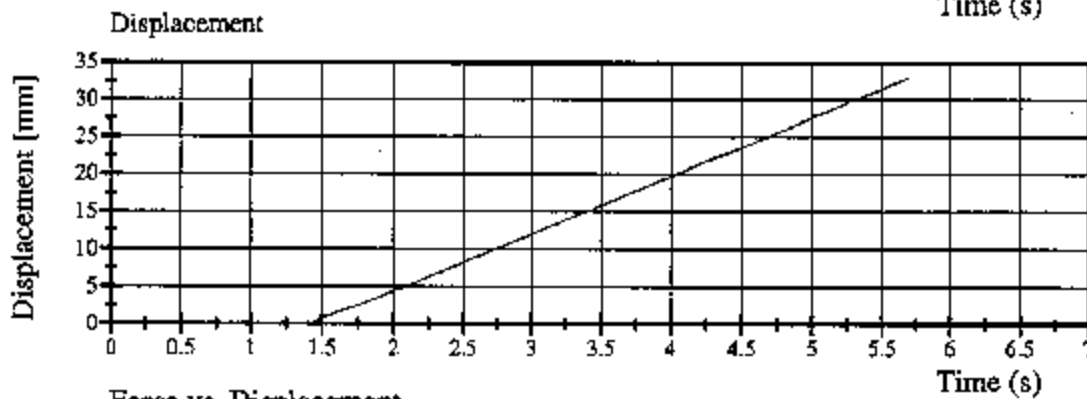
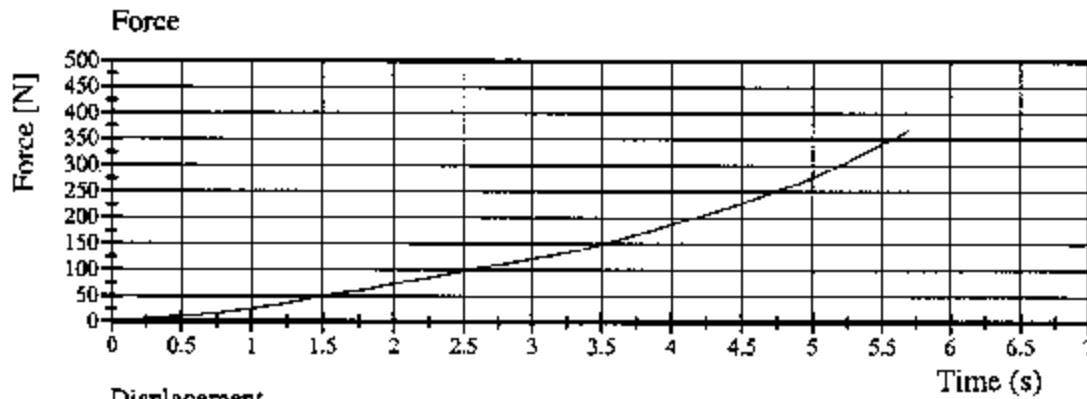


# Transportation Research Center Inc.

572B Abdomen Compression Test

HIH SID Serial No. 028 Calibration No. 03 - 1

Test Date 03/24/2003



TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

SID PART 572B

CAL DATE: 24-Mar-03


TRC, INC.

TEST NO: 028C03LF1

572B SN 028 TORSO FLEX CAL 03

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6° C	21.7 °C
RELATIVE HUMIDITY	10 - 70 %	44 %
FORCE AT 0 DEG. FLEXION	-27 - 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 - 151 N	120.1 N
FORCE AT 30 DEG OF FLEXION	151 - 205 N	173.5 N
FORCE AT 40 DEG OF FLEXION	205 - 258 N	235.8 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12°	7°

TEST MEETS SPECIFICATIONS

TECHNICIAN 



## TRANSPORTATION RESEARCH CENTER INC.

## LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

21-MAR-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: SPL02803

572F SN028 LEFT PELVIS CAL

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	46.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.28 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	45.5 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.2 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 032103.1445;1

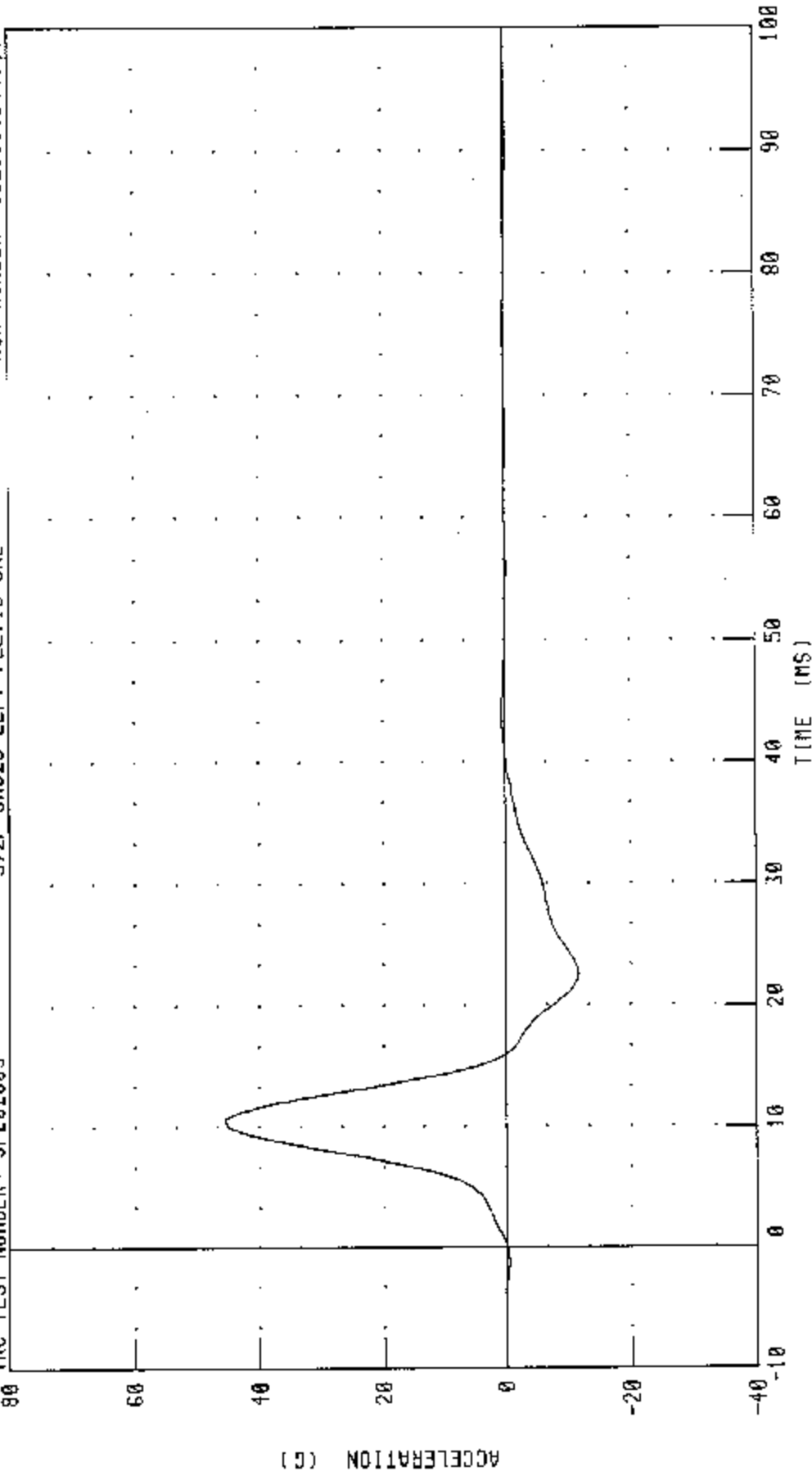
PART 572-F S.I.O. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

TRC TEST NUMBER: SPL02803

572F SN028 LEFT PELVIS CAL

RUN NUMBER: 032103.1445.1



CHANNEL: PELVIS

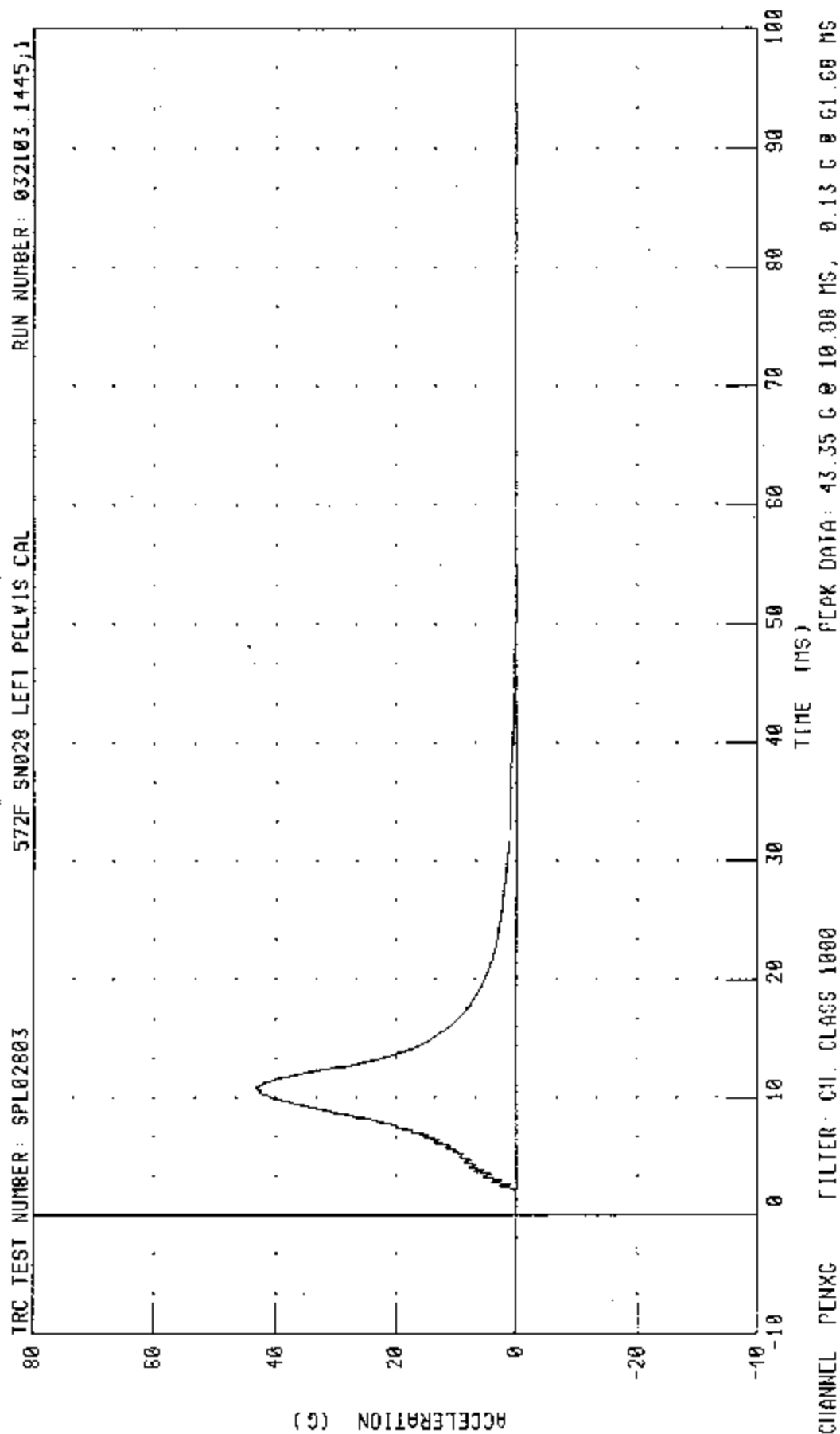
FILTER: FIR 100

TIME (MS)

PEAK DATA: 45.50 G @ 10.63 MS; -11.72 G @ 22.50 MS

# PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

## PENDULUM DECELERATION



Calibration Test Results

Post-Test

SID: 065

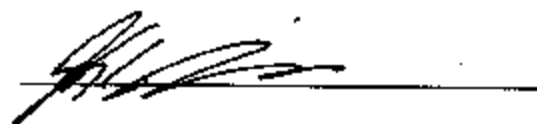
Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was not tested at this time.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.

**Transportation Research Center Inc.**  
**572F SID Dummy**  
**External Dimensions**  
**Serial No. 065    Calibration No. 06**

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	897 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	511 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	236 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	514 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	497 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	373 mm	Yes
Top Rib Width From CVL	RW-1	165.1 - 180.3 mm	170 mm	Yes
Bottom Rib Width From CVL	RW-2	165.1 - 180.3 mm	171 mm	Yes
Difference Between Top & Bottom Rib Width from CVL		$\leq$ 2.5 mm	1.0 mm	Yes

Technician



Approved



**TRE**

TRANSPORTATION RESEARCH CENTER INC.

LATERAL HEAD DROP TEST

HYBRIDIII SID DUMMY

24-MAR-03

LEFT SIDE CONFIGURATION

TRC INC.

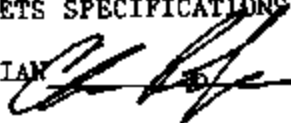
TEST NO. HDL06506

H3/SID SN065 HEAD DROP CAL06

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.67 deg. C
RELATIVE HUMIDITY	10 - 70 %	44.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	141.44 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	5.46 G
IS ACCELERATION CURVE UNINODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 032403.0753;1

BIOSID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: H0106506

H3/SID SN065 HEAD DROP CAL06

RUN NUMBER: 032403.1249.1

120

80

40

ACCELERATION (G)

C-101

-40

-80

-120

TIME (MS X 10<sup>-1</sup>)

0 10 20 30 40 50 60 70 80 90 100

CHANNEL HEDXC FILTER CH. CLASS 1000

PEAK DATA: 5.16 G @ 3.14 MS, -4.25 G @ 2.08 MS

030317-2

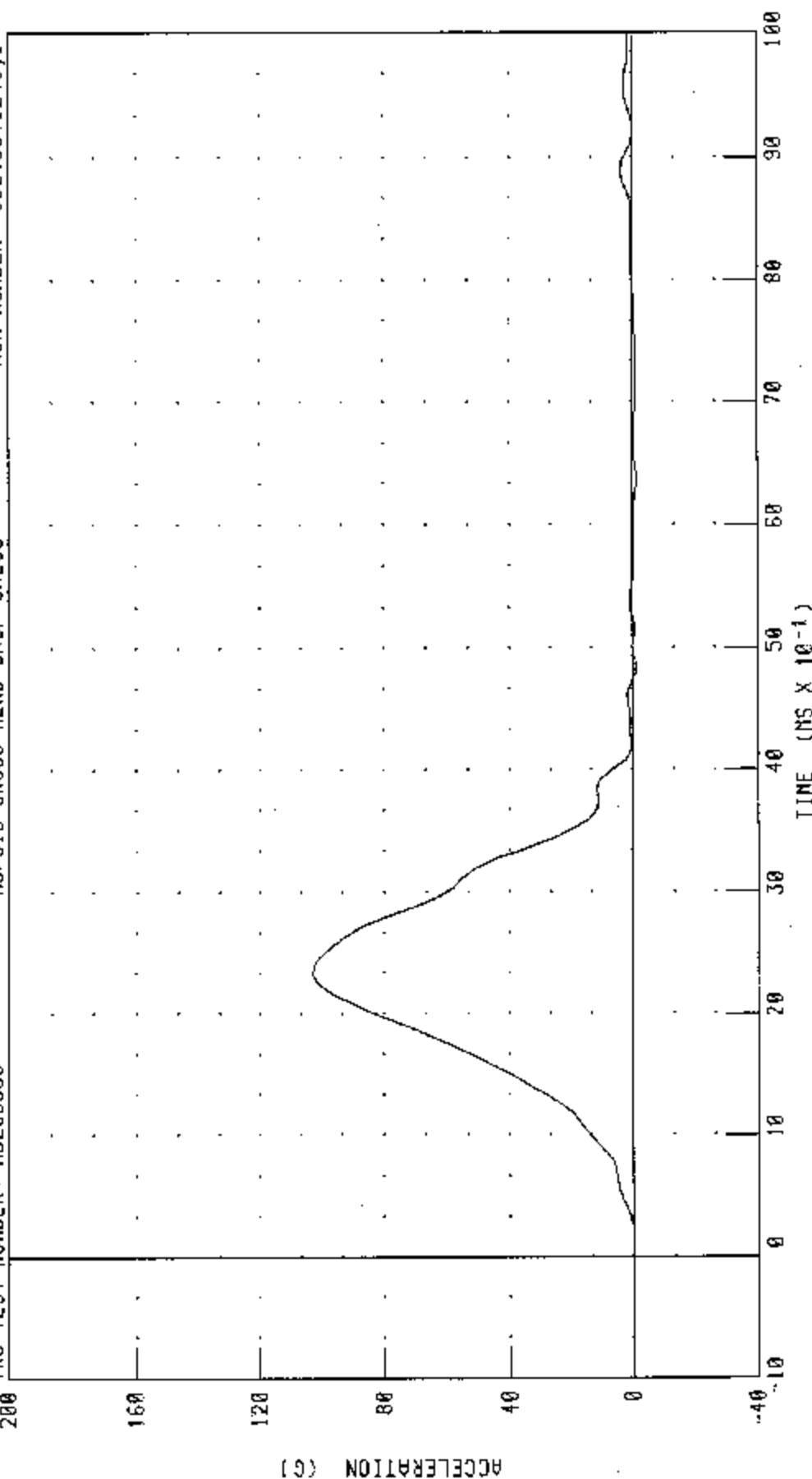
# BIOSID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: HDL06506

H3/SID SN065 HEAD DROP CAL06

RUN NUMBER: 032403.1249.1



CHANNEL HEDYC FILTER: CH. CLASS 1000

PEAK DATA: 102.94 G @ 2.32 MS; -1.60 G @ 6.40 MS



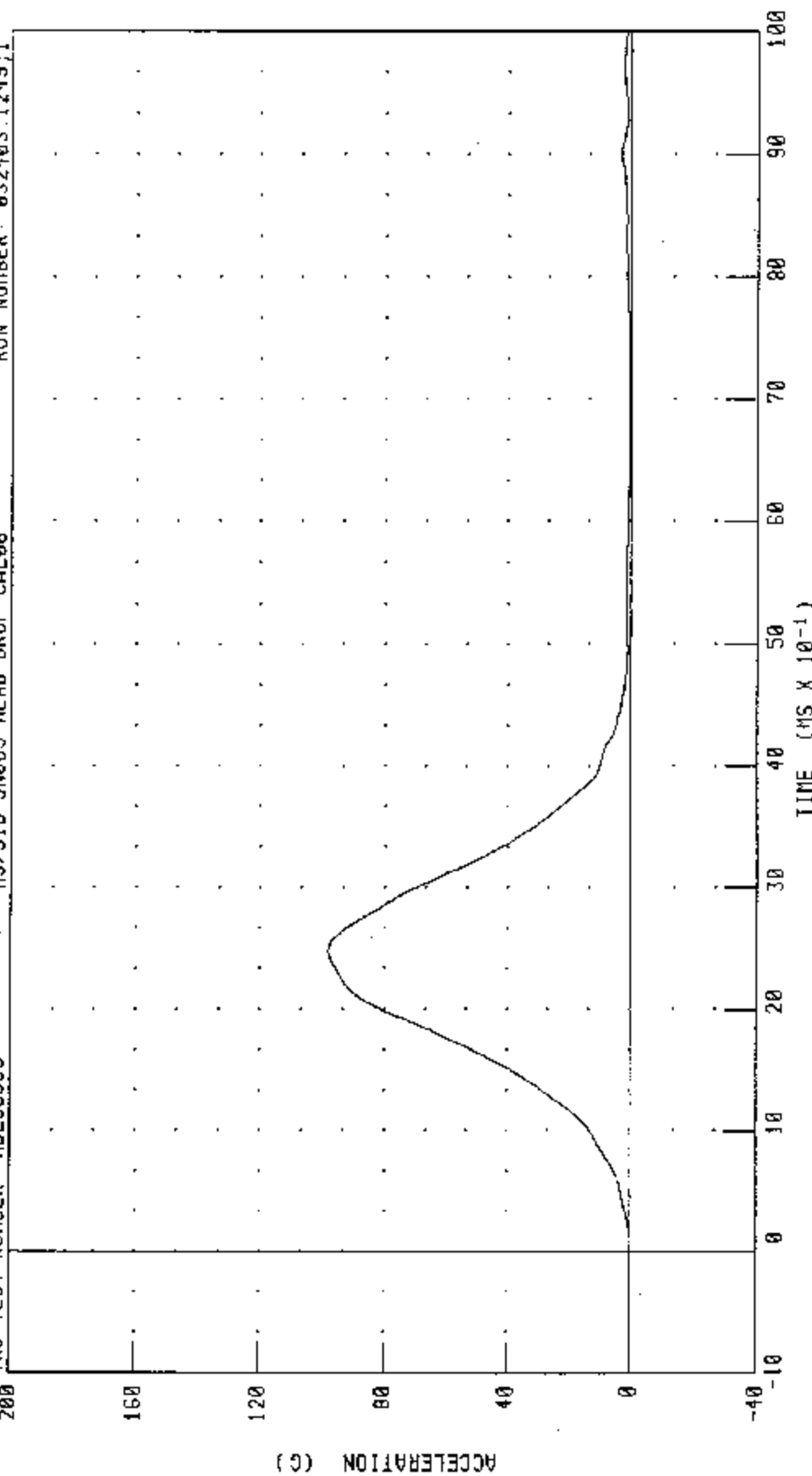
# BIOSID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION 7 AXIS

TRC TEST NUMBER: HDL06506

H3/SID SN065 HEAD DROP CAL06

RUN NUMBER: 032403.1249.1



CHANNEL: HEDZG FILTER: CH. CLASS 1000

PEAK DATA: 98.39 G @ 2.40 MS, -0.06 G @ -0.80 MS

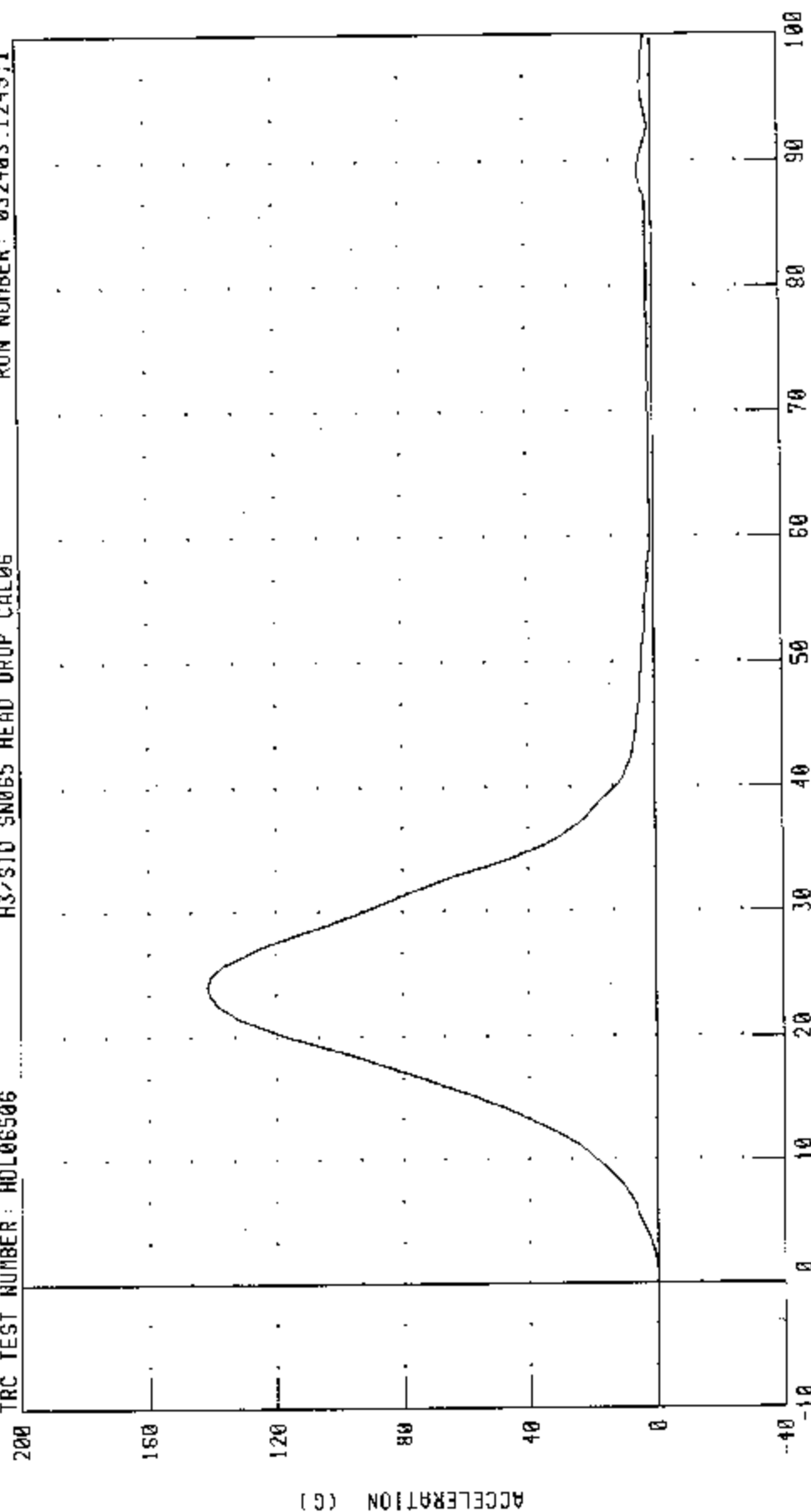
# BIOSID DUMMY CALIBRATION 35 DEGREE LEFT LATERAL HEAD DROP

HEAD RESULTANT ACCELERATION

RUN NUMBER: 032403.1249.1

H3/S10 SN055 HEAD DROP CAL06

TRC TEST NUMBER: H0106506



TIME (MS X 10<sup>-1</sup>)

PEAK DATA 141.44 G @ 2.40 MS, 0.01 G @ -0.96 MS

CHANNEL HEADRC FILTER CH. CLASS 1000

## TRANSPORTATION RESEARCH CENTER INC.

## LATERAL NECK TEST

HYBRIDIII SID DUMMY

24-MAR-03

## LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. NFL06506

H3/SID SN065 NECK LEFT CAL06

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 deg. C	21.67 deg. C
RELATIVE HUMIDITY		10 - 70 %	44.00 %
IMPACT VELOCITY		6.89 - 7.13 M/S	7.06 M/S
INTEGRATED VELOCITY	10 MS	1.96 - 2.55 M/S	2.28 M/S
	20 MS	4.12 - 5.10 M/S	4.50 M/S
	30 MS	5.73 - 7.01 M/S	6.39 M/S
	40 - 70 MS	6.27 - 7.64 M/S	7.16- 7.26 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION		66 - 82 deg.	75.27 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO		58 - 67 MS	62.16 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE		73 - 88 NM	79.34 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO		49 - 64 MS	54.72 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT		2 - 16 MS	9.84 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 032403.0931;1

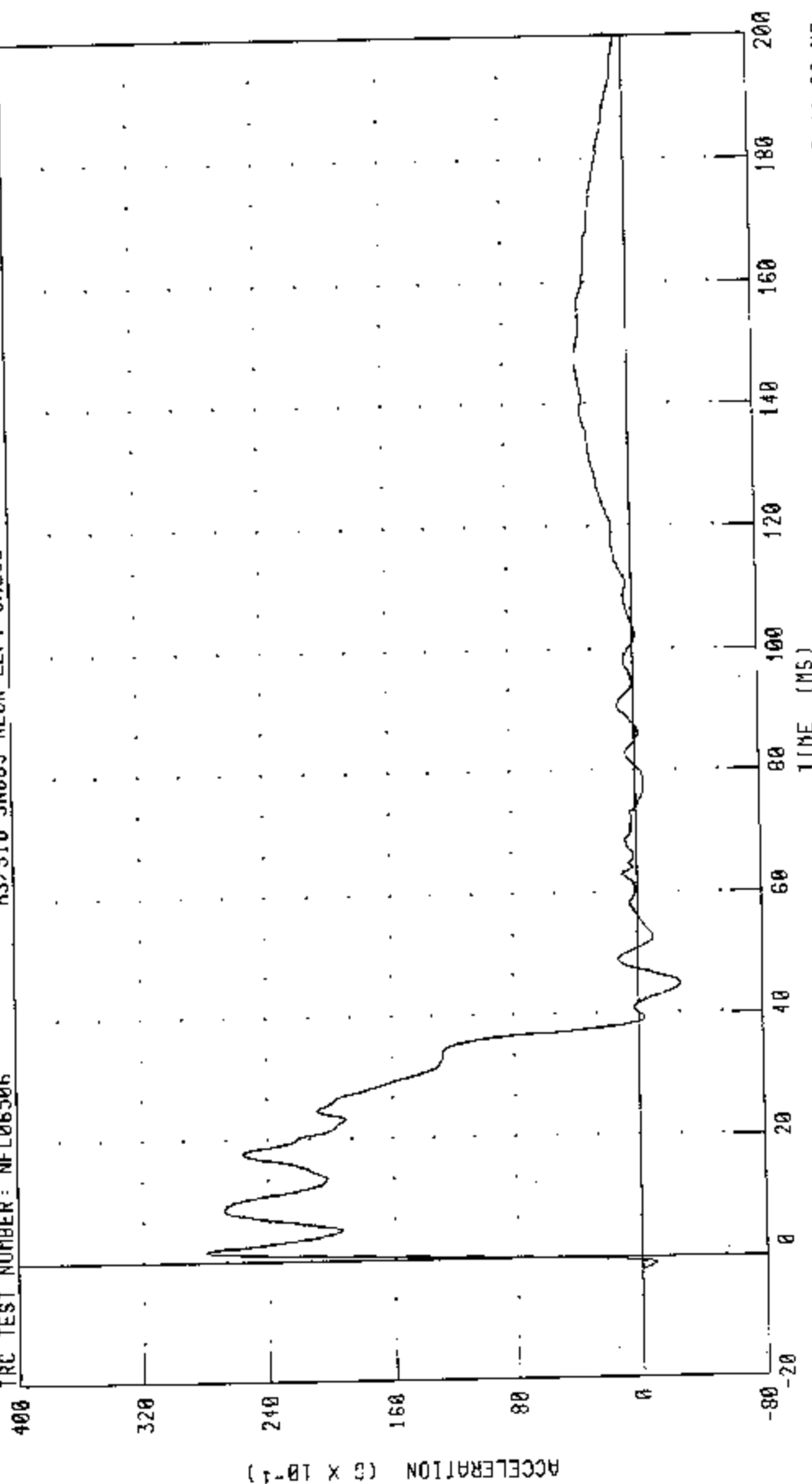
# H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

PENDULUM DECELERATION

RUN NUMBER: 032403 0932.1

H3/SID SN065 NECK LEFT CAL06

TRC TEST NUMBER: NFL06506



PEAK DATA: 27 94 G @ 1.60 MS; -2.75 G @ 41.80 MS

TIME (MS)

CHANNEL: PENXG FILTER: CIL CLASS 100

ACCELERATION (G X 10<sup>-1</sup>)

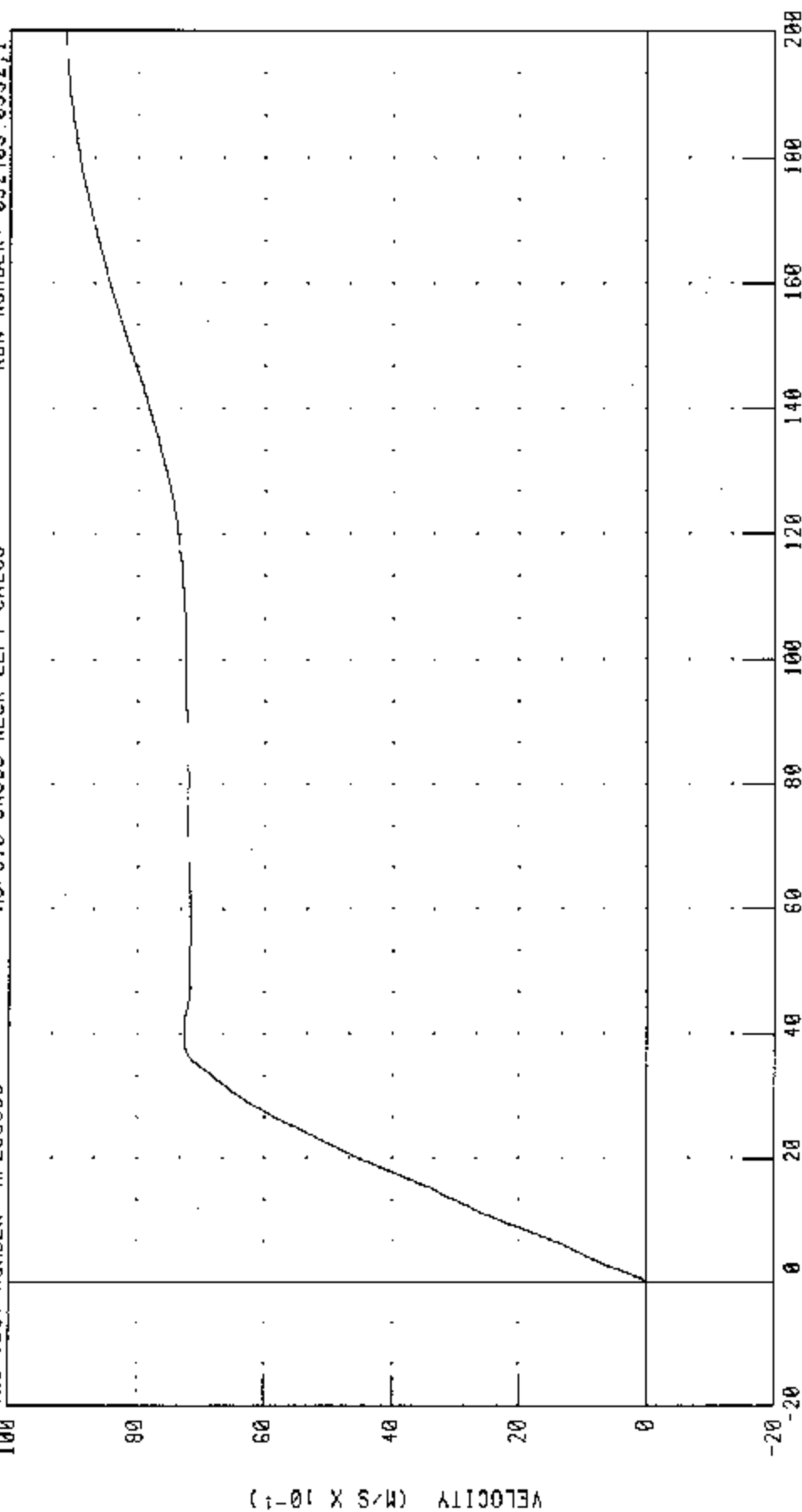
# H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

INTEGRATED PENDULUM VELOCITY

TRC TEST NUMBER: NFL06506

H3/SID SN065 NECK LEFT CAL08

RUN NUMBER: 032403 0932.1



TIME (MS)

CHANNEL PENXVI FILTER CH. CLASS 180

PEAK DATA 9 13 M/S 0 200 00 MS; -0 01 M/S 0 -0 56 MS

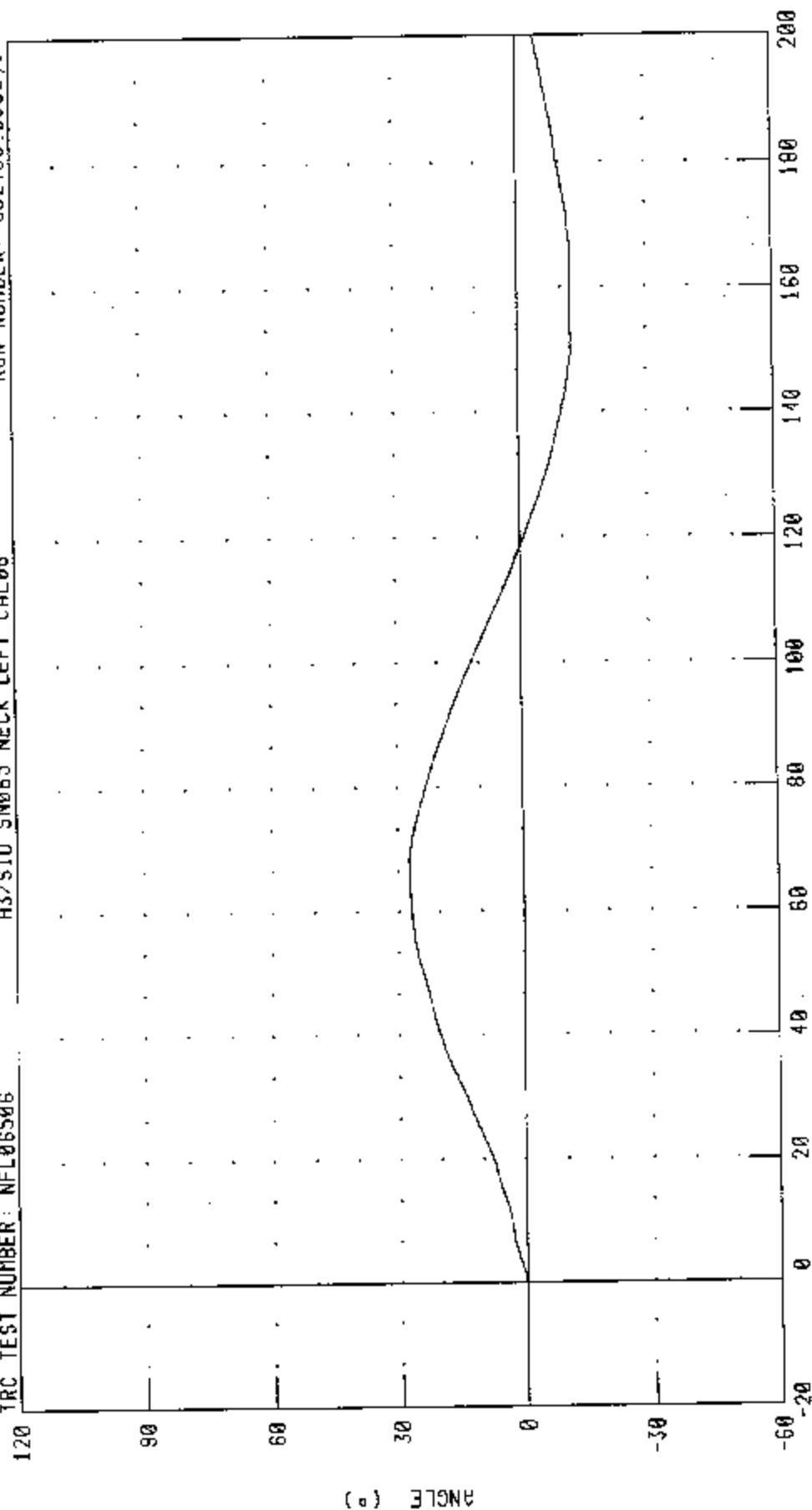
# H3/SID DUNNY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT BASE OF NECK

H3/SID SMOES NECK LEFT CAL06

RUN NUMBER: 032403.0932.1

TRC TEST NUMBER: NFL06506



TIME (MS)

PEAK DATA: 27.28 ° @ 66.32 MS, -12.38 ° @ 157.36 MS

CHANNEL: BETA FILTER: CH. CLASS 60

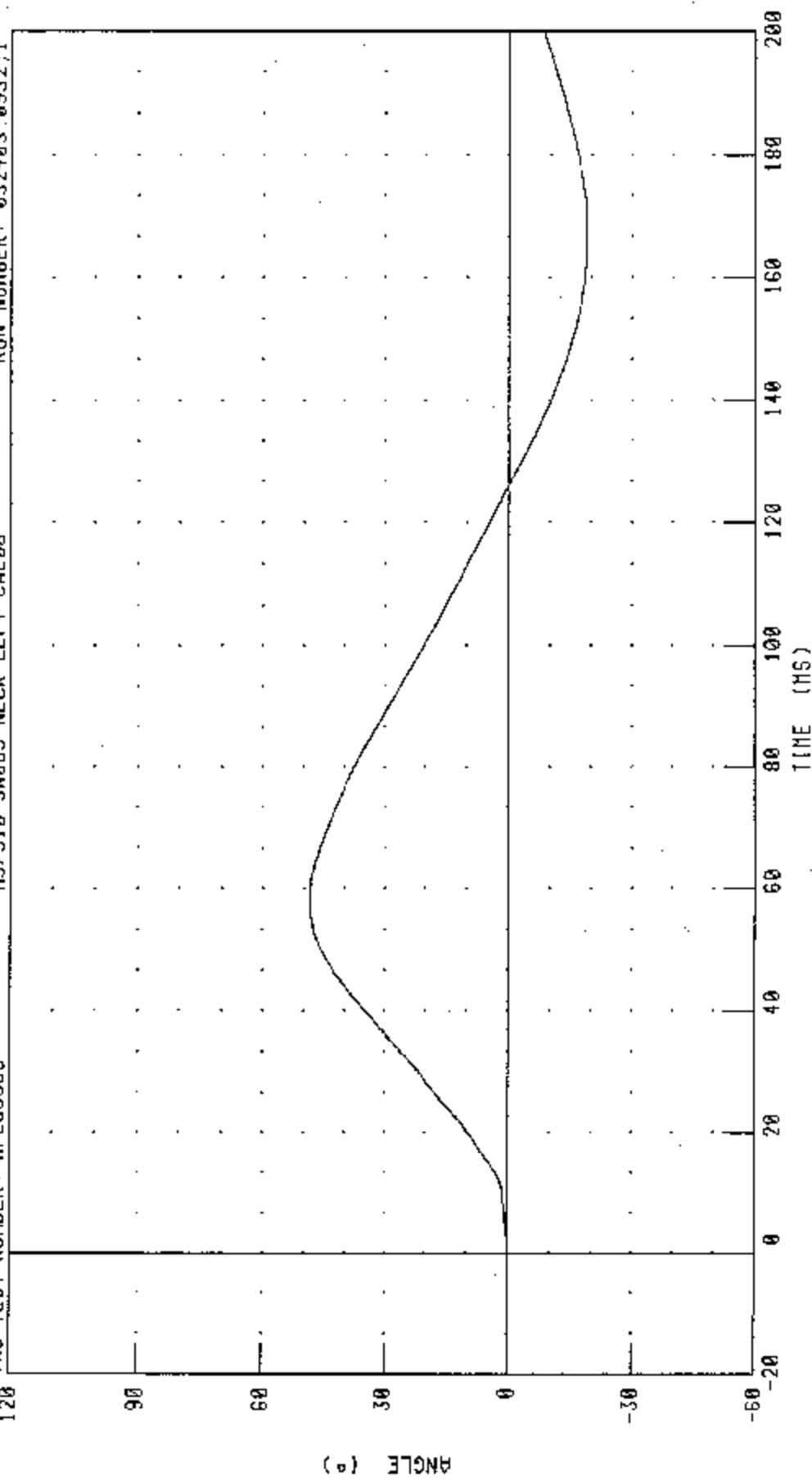
# H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NFL06506

H3/SID SN055 NECK LEFT CAL06

RUN NUMBER: 032403.0932.1



CHANNEL: THETA FILTER: CH. CLASS 60

PEAK DATA 18.41 ° @ 58.40 MS, -19.00 ° @ 106.40 MS

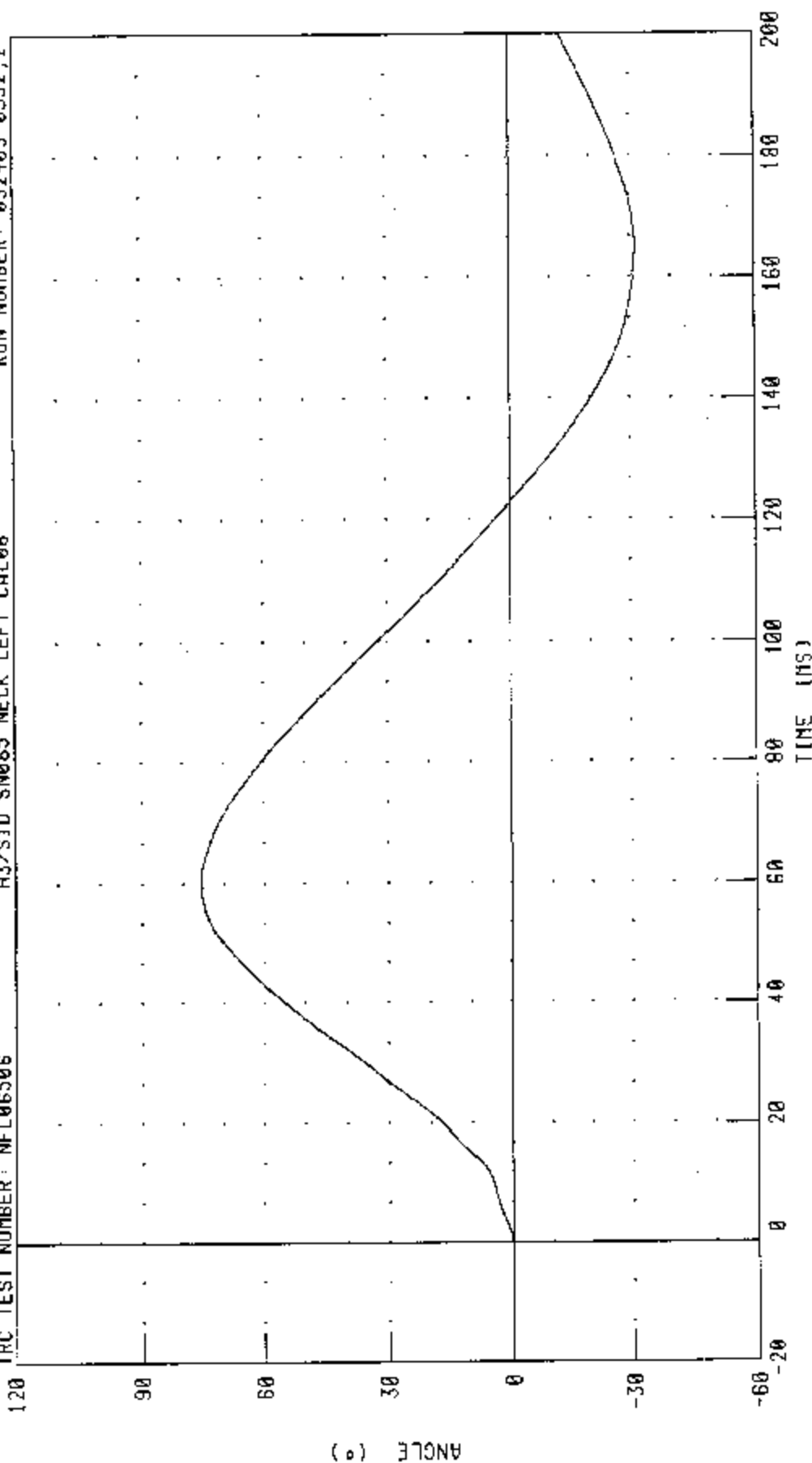
# H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

TOTAL ROTATION

TRC TEST NUMBER: NFL06506

H3/SID SN055 NECK LEFT CAL06

RUN NUMBER: 032403 0932;1



PEAK DATA: 75.27 ° @ 60.72 MS; -31.24 ° @ 165.20 MS

CHANNEL: TOTAN FILTER: CH. CLASS 60

ANGLE (°)

030317-2

C-110



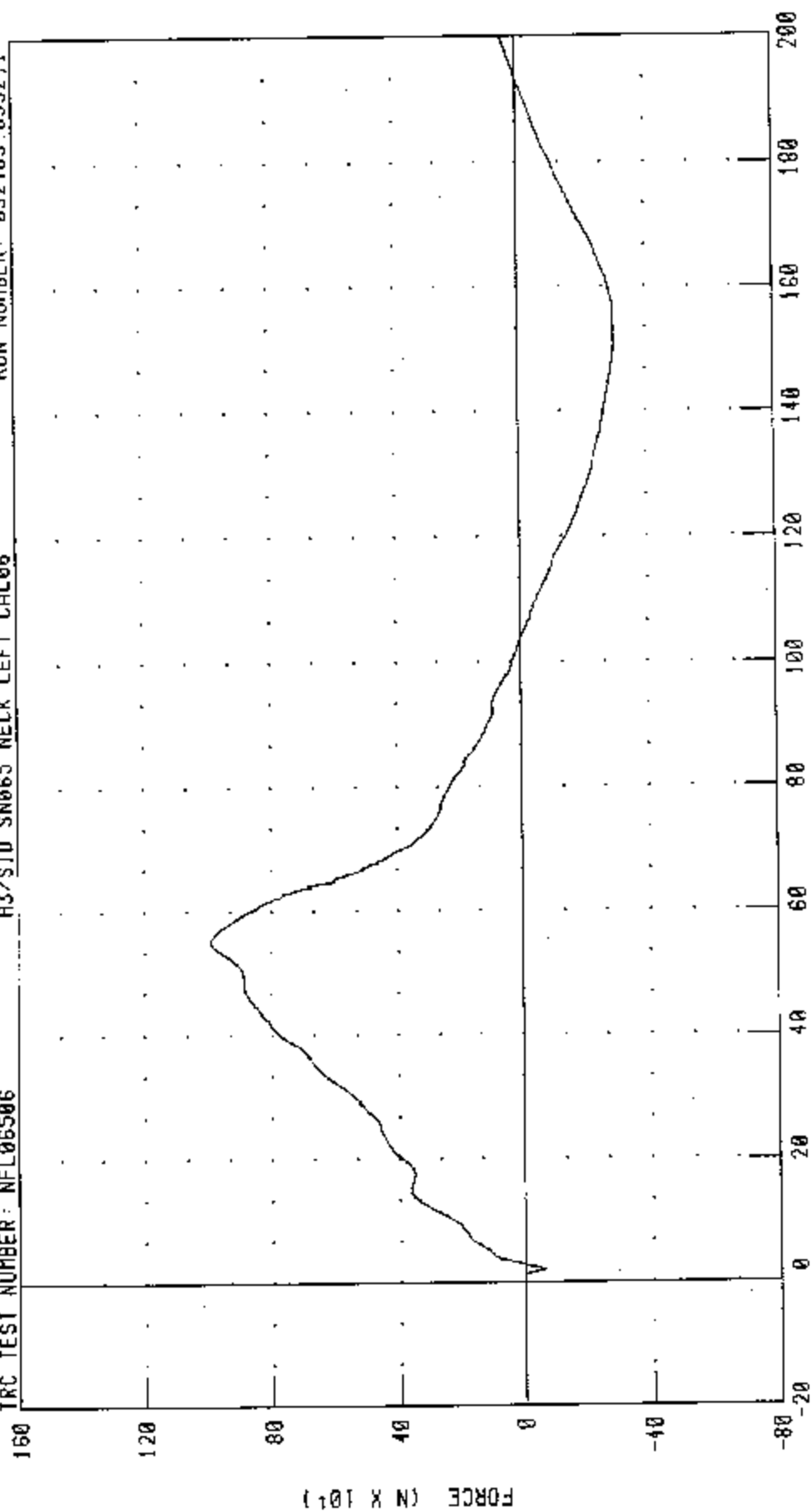
# H3/SID DUNNY CALIBRATION -- LEFT LATERAL NECK TEST

NECK FORCE Y AXIS

RUN NUMBER: 032403.0932.1

H3/SID SN065 NECK LEFT CAL06

TRC TEST NUMBER: NFL06506



TIME (MS)

PEAK DATA: 990.89 N @ 55.36 MS; -304.20 N @ 153.44 MS

CHANNEL: NEKYF FILTER: CIL CLASS 1000

# H3/SID DUNNY CALIBRATION -- LEFT LATERAL NECK TEST

NECK MOMENT X AXIS

RUN NUMBER: 032403.0932;1

H3/SID SN055 NECK LEFT CAL06

TRC TEST NUMBER: NFL06506

160

120

80

40

0

-40

-80

TORQUE (N·M)

TIME (MS)

200

180

160

140

120

100

80

60

40

20

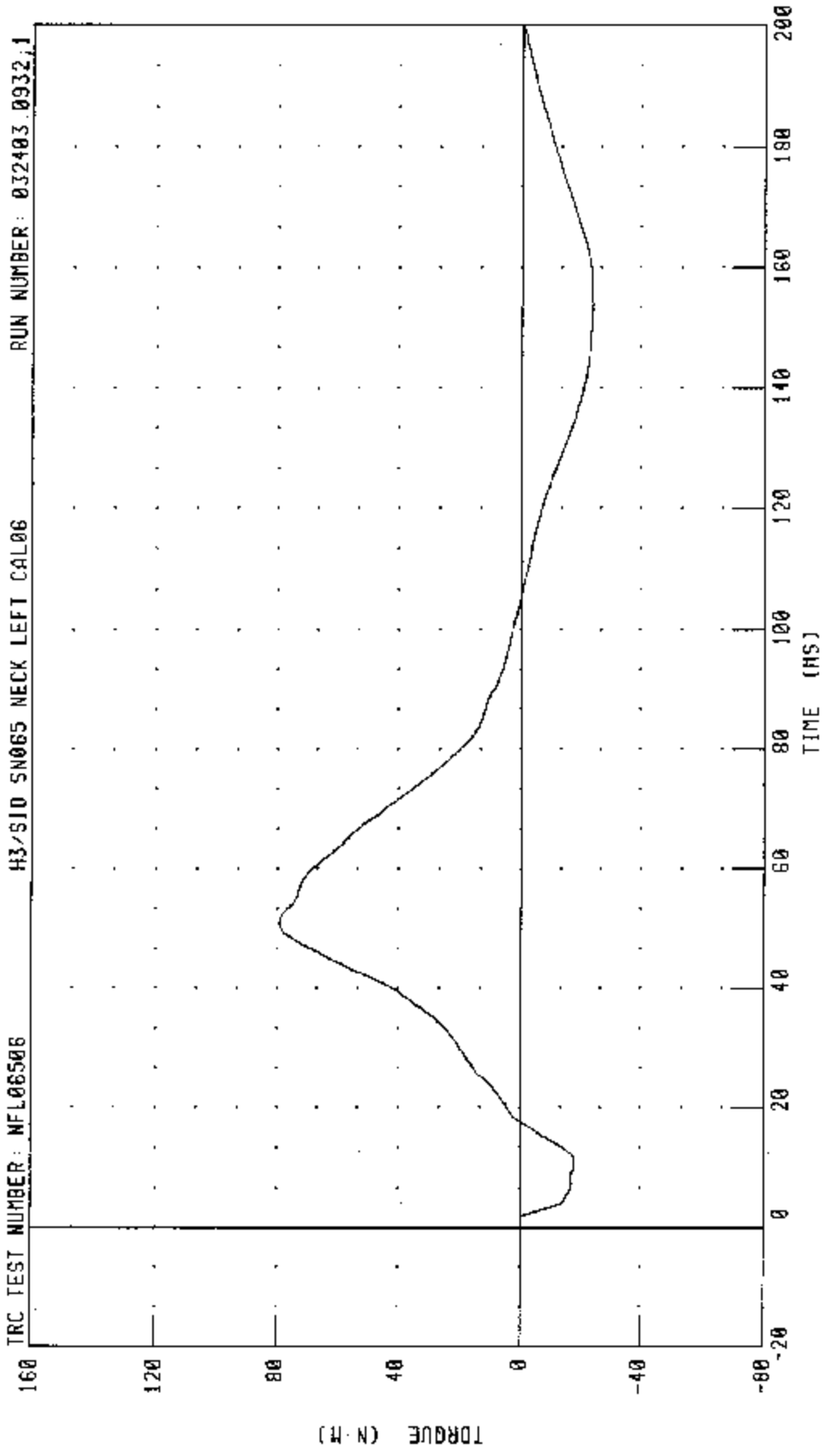
0

-20

PEAK DATA: 63.38 N·M @ 50.72 MS, -23.17 N·M @ 11.60 MS

CHANNEL: NEKXH FILTER: CH CLASS 600

# H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST TOTAL MOMENT ABOUT OCCIPITAL CONDYLE



TRC TEST NUMBER: NFL06506

H3/SID SN065 NECK LEFT CAL06

RUN NUMBER: 032403.0932.1

CHANNEL: NEKOM FILTER: CH. CLASS 600

PEAK DATA: 79.34 N·m @ 50.88 ms, -23.99 N·m @ 154.08 ms

## TRANSPORTATION RESEARCH CENTER INC.

## LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

21-MAR-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: STL06506A

572F SID SN065 L.THORAX CAL06

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	47.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.30 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	40.9 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	38.6 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	19.2 G

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 032103.1046;1

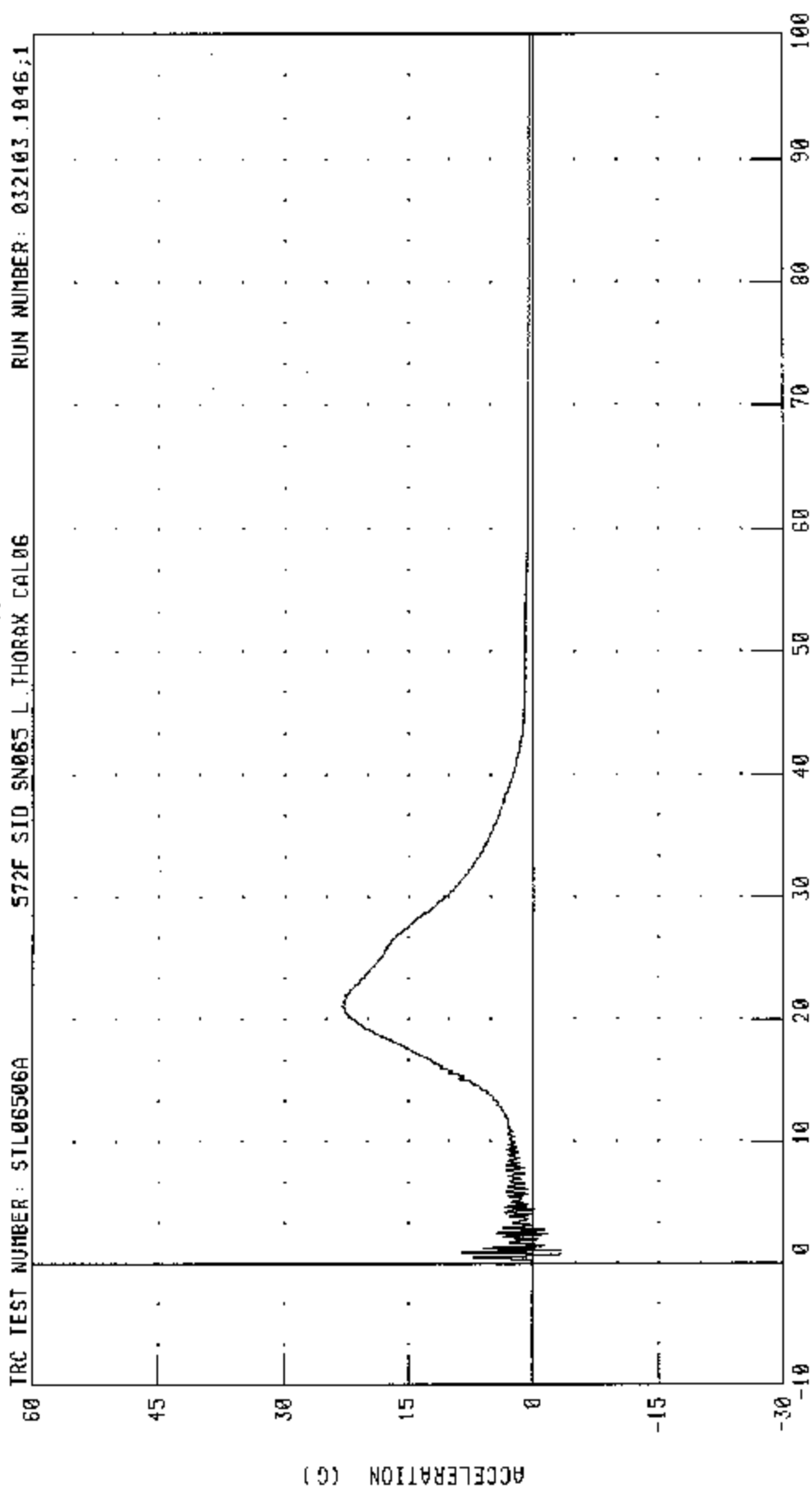
PART 572-F S.1.0. THORAX CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: STL06506A

572F SID SN065 L THORAX CAL06

RUN NUMBER: 032103.1046;1



PEAK DATA: 23.11 0 0 21 52 MS, -3 59 0 0 0.72 MS

CHANNEL: PENXC FILTER: CH. CLASS 1000

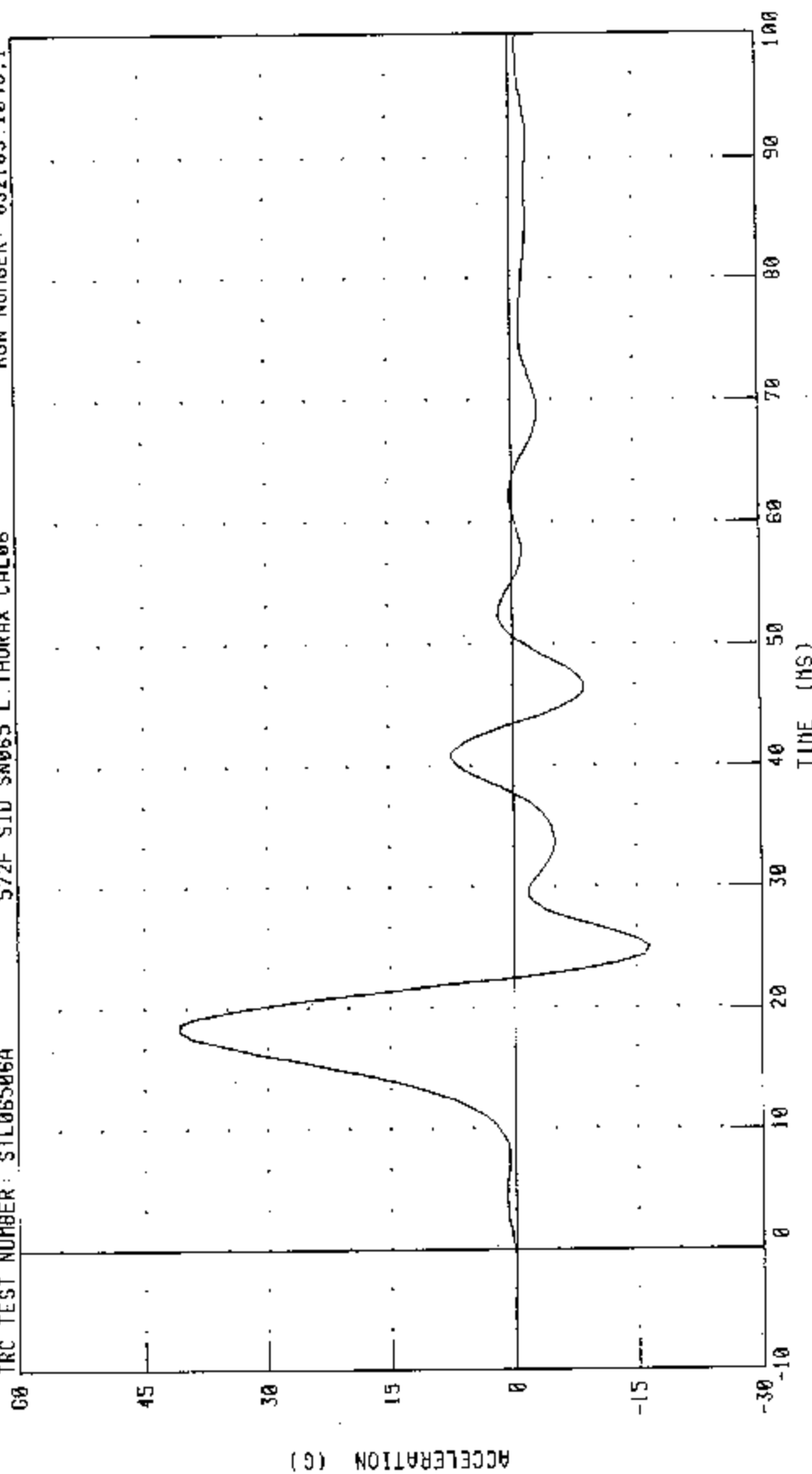
# PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT UPPER RIB ACCELERATION Y AXIS

RUN NUMBER: 032103.1046.1

TRC TEST NUMBER: ST106506A

572F SID SN065 L THORAX CAL06



PEAK DATA: 40.88 G @ 18.13 MS, 10.58 G @ 25.00 MS

CHANNEL: LURYG FILTER: FIR 100

(G) ACCELERATION

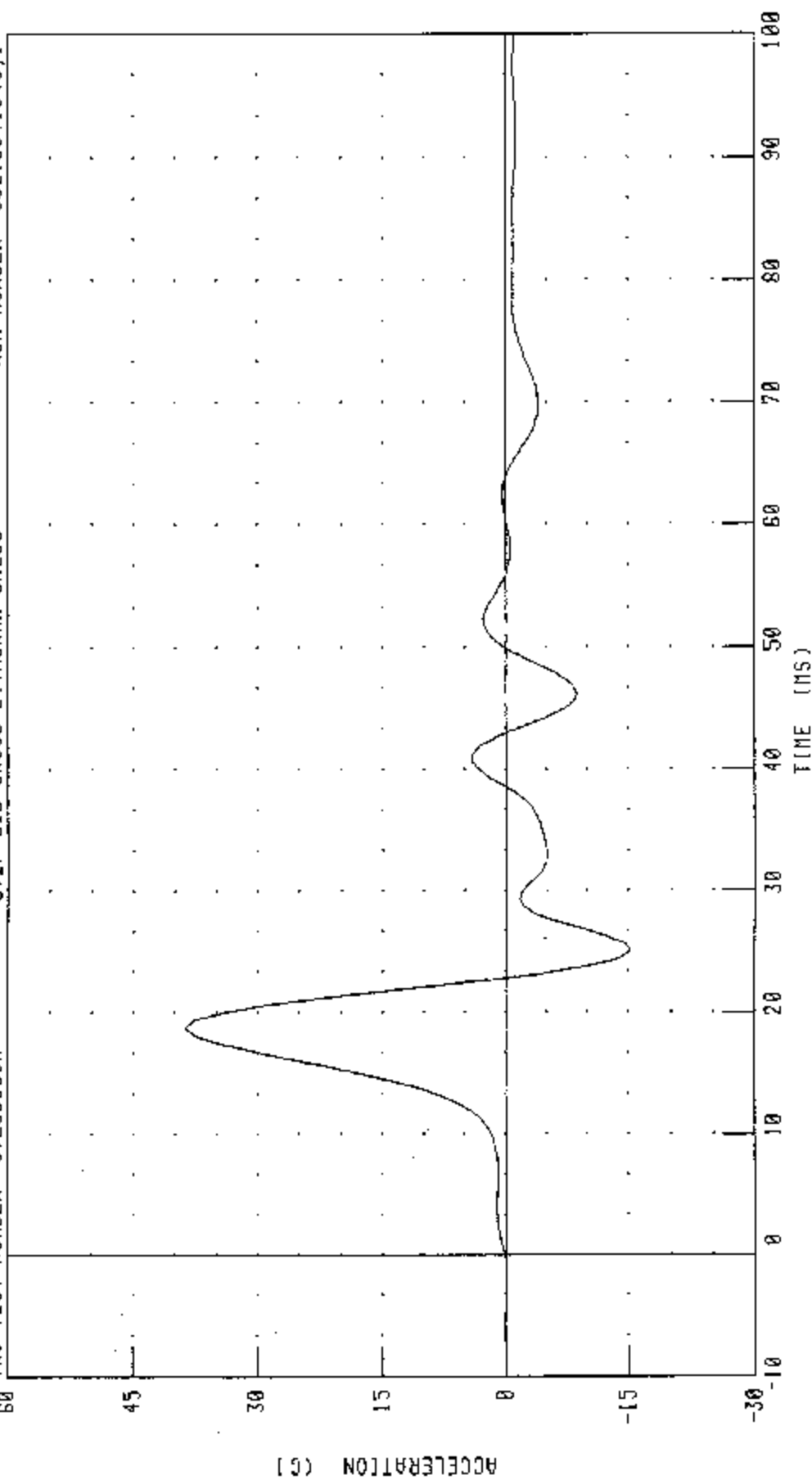
# PART 572-F S I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT LOWER RIB ACCELERATION Y AXIS

RUN NUMBER: 032103.1046.1

TRC TEST NUMBER: ST106506A

572F SIO SN065 L THORAX CAL06



PEAK DATA: 38.65 G @ 18.75 MS; -15.30 G @ 25.00 MS

CHANNEL: LLRYG FILTER: FIR 100

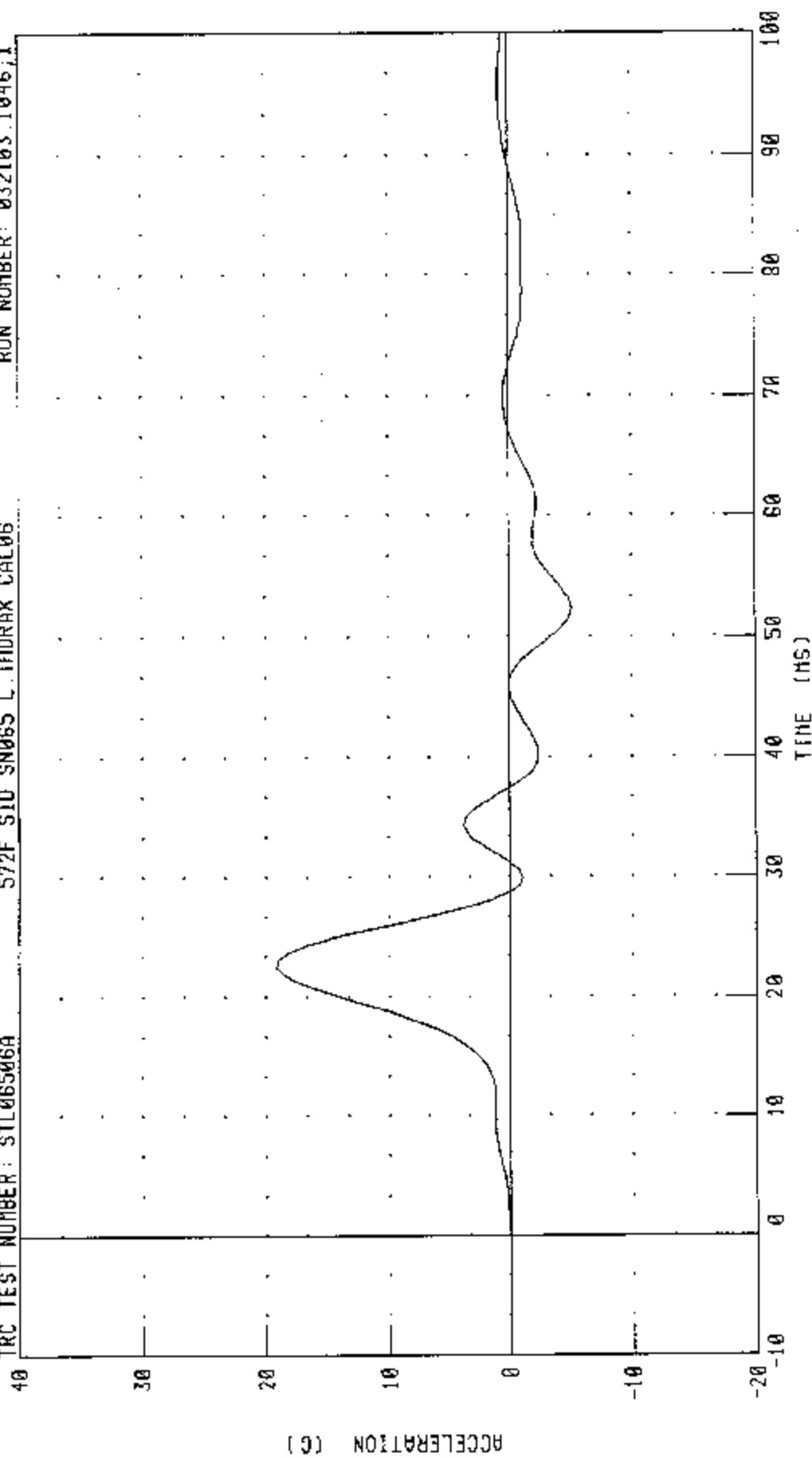
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

RUN NUMBER: 032103.1046.1

572F SID SN065 L THORAX CAL06

TRC TEST NUMBER: STL06506A



PEAK DATA: 19.10 C @ 22.50 MS, -5.09 G @ 52.50 MS

CHANNEL: T12YC FILTER: FIR 100



# Transportation Research Center Inc.

572B Abdomen Compression Test

HIII SID Serial No. 065 Calibration No. 06 - 1

Test Date 03/21/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	7.0 - 8.4 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician



Approved



03.21.2003 14:23:24 10

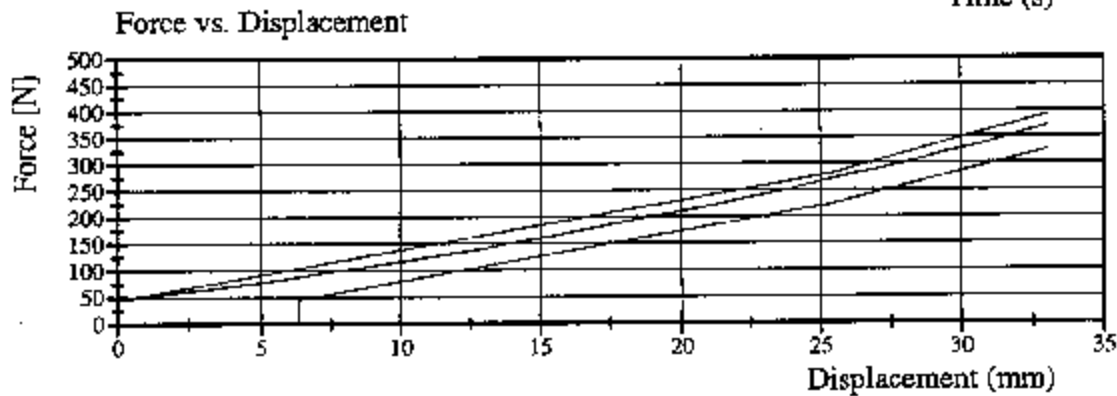
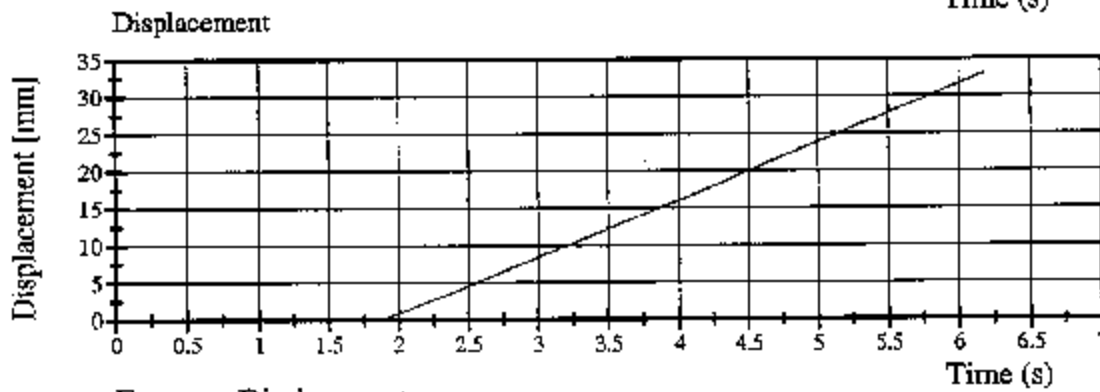
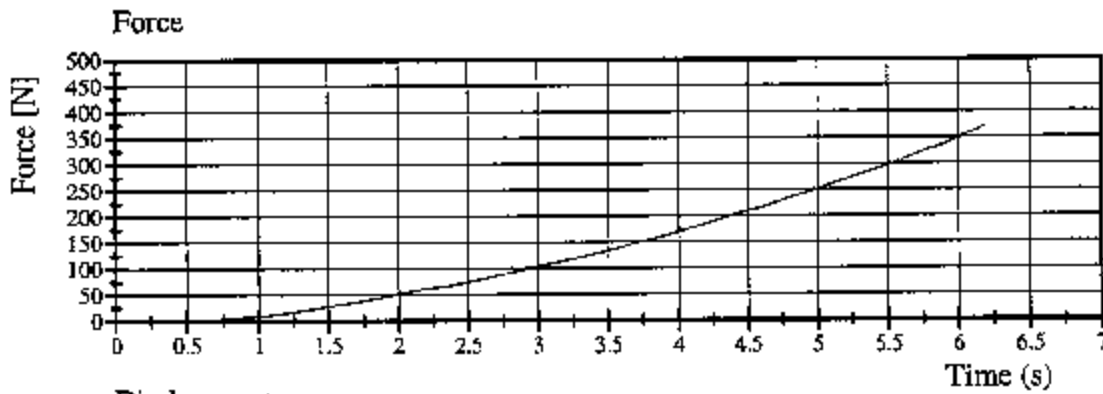


# Transportation Research Center Inc.

572B Abdomen Compression Test

HIII SID Serial No. 065 Calibration No. 06 - 1

Test Date 03/21/2003



03.21.2003 14:23:25 10



**TRANSPORTATION RESEARCH CENTER INC.**

**LUMBAR FLEXION TEST**

**SID PART 572B**

**CAL DATE: 27-Feb-03**

**TRC, INC.**

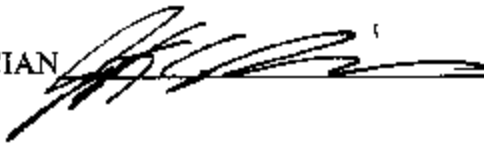
**TEST NO: 065C06TF1**

**572B SN 065 TORSO FLEX CAL 06**

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6° C	21.1 °C
RELATIVE HUMIDITY	10 - 70 %	45 %
FORCE AT 0 DEG. FLEXION	-27 - 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 - 151 N	120.1 N
FORCE AT 30 DEG OF FLEXION	151 - 205 N	186.8 N
FORCE AT 40 DEG OF FLEXION	205 - 258 N	226.7 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	8 °

**TEST MEETS SPECIFICATIONS**

**TECHNICIAN**



TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

21-MAR-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: SPL06506

572F SN065 LEFT PELVIS CAL06

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	47.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.30 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	56.3 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	5.9 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 032103.0934;1

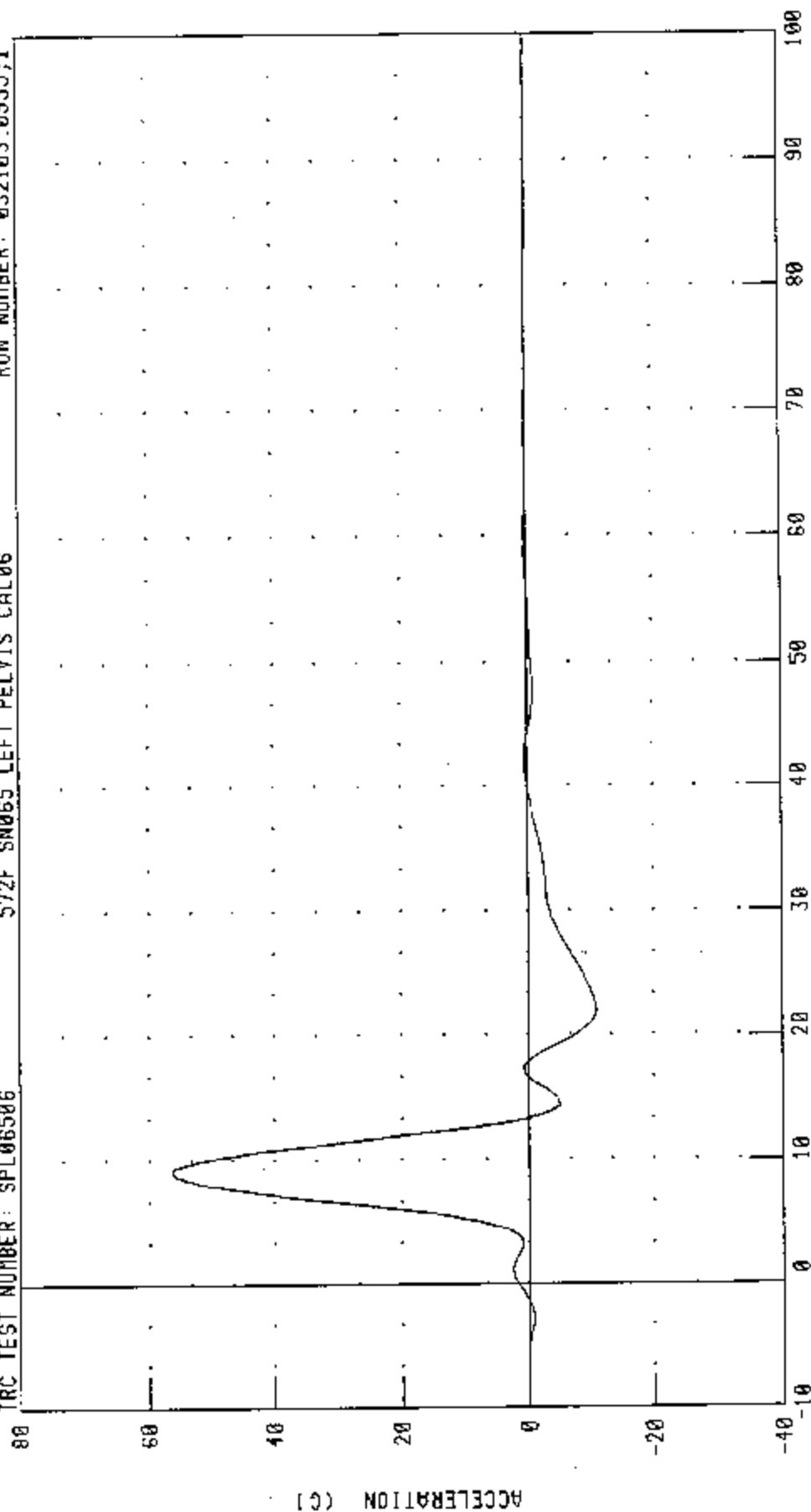
# PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

572F SN065 LEFT PELVIS CAL06

TRC TEST NUMBER: SPL06506

RUN NUMBER: 032103.0935;1



CHANNEL: PEVYC FILTER: FIR 100

PEAK DATA: 56.28 G @ 9.37 MS; -10.84 G @ 21.00 MS

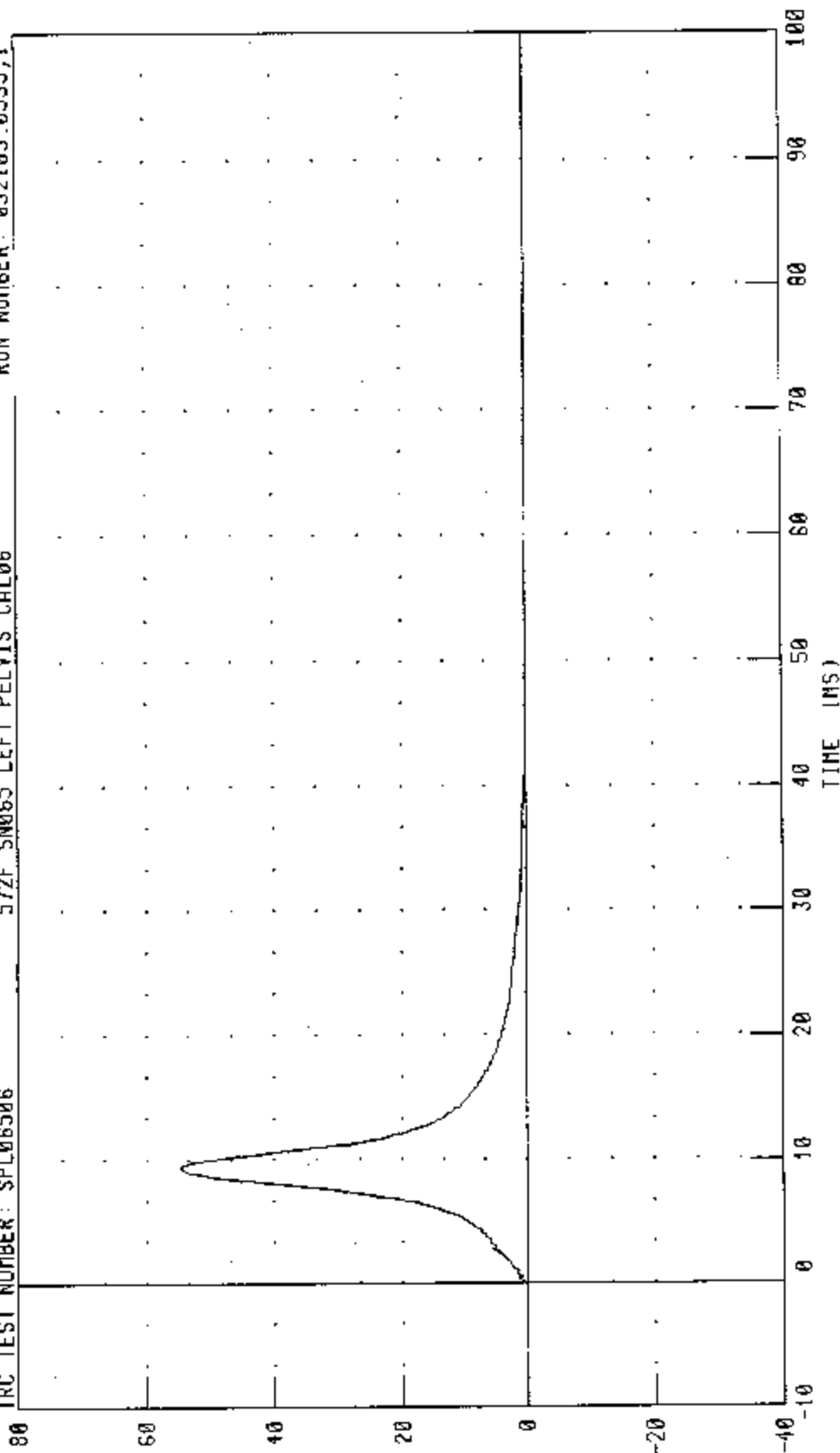
# PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: SPL06506

572F SN065 LEFT PELVIS CAL06

RUN NUMBER: 032103.0935;1



CHANNEL: PENXC FILTER: CH CLASS 1000

PEAK DATA: 54.71 0 0 9 44 MS; -0 12 0 0 70 52 MS

(G) ACCELERATION

## Transportation Research Center Inc.

## SID Pre-Use Inspection

Type: HIID SID S/N: 028Mfr: VectorTest Date: 03/17/03Proj./Seg. No.: 20020455-1100Test Eng.: Ginny Watters

ITEM	PRE-USE	
<b>HEAD:</b>		
Head Ballast Condition	X	
Accel. Mount Bolts and Cables	X	
Skull Cap Bolts	X	
Head Skin Condition	X	
Accel. Cable Exit (left or right)	(Left)	(Right) X
<b>NECK:</b>		
Rubber Condition and Separation From End Caps	X	
<b>THORAX:</b>		
Stacked Shoulder Foams and Bolts	X	
* Rib Cage Spring and Support Assembly	X	
* Rib Cage Bolts	X	
* Damper Rear Attachment Ring, Pivot Pins, and Bracket	X	
* Location and Adjustment of Chest Pot Bracket and Collars	X	
* Chest Pot Rod End Nuts and Eyebolt	X	
Arm Foam Orientation	X	
Thorax/Lumbar Spine Bolts	X	
<b>PELVIS:</b>		
Tightness and Alignment of H-Point Tool Insert	X	
* Hips Range of Motion and 1-2g Adjustment (before calibration only)	X	
Upper Femur Bolt Adjustment and Position	X	
Check Spine Kits (Yellow tape = Kits/No tape = No kits)	(With) X	(Without)
<b>LEGS AND FEET:</b>		
Femur Load Cell Bolts (40 ft/lbs)	X	
Breakaway Femur Bolts (5-6 ft/lbs)	X	
Knee Joint Function and Range of Motion	X	
Leg Skin Condition and Position	X	
Ankle Range of Motion	X	
Foot Condition	X	
<b>OTHER:</b>		
Cleanliness	X	
Target Position	X	
Clothes Pink	X	
Shoes	X	
Knee & Ankle One G Joint Adjustments	X	

Inspection Completed By: J. ClarridgeDate: 03/14/03

Transportation Research Center Inc.

SID Pre-Use Inspection

Type: HIII SID S/N: 065 Mfr: Denton Test Date: 03/17/03Proj./Seg. No.: 20020455-1100 Test Eng.: Ginny Watters

ITEM	PRE-USE	
<b>HEAD:</b>		
Head Ballast Condition	X	
Accel. Mount Bolts and Cables	X	
Skull Cap Bolts	X	
Head Skin Condition	X	
Accel. Cable Exit (left or right)	(Left)	(Right) X
<b>NECK:</b>		
Rubber Condition and Separation From End Caps	X	
<b>THORAX:</b>		
Stacked Shoulder Foams and Bolts	X	
* Rib Cage Spring and Support Assembly	X	
* Rib Cage Bolts	X	
* Damper Rear Attachment Ring, Pivot Pins, and Bracket	X	
* Location and Adjustment of Chest Pot Bracket and Collars	X	
* Chest Pot Rod End Nuts and Eyebolt	X	
Arm Foam Orientation	X	
Thorax/Lumbar Spine Bolts	X	
<b>PELVIS:</b>		
Tightness and Alignment of H-Point Tool Insert	X	
* Hips Range of Motion and 1-2g Adjustment (before calibration only)	X	
Upper Femur Bolt Adjustment and Position	X	
Check Spine Kits (Yellow tape = Kits/No tape = No kits)	(With) X	(Without)
<b>LEGS AND FEET:</b>		
Femur Load Cell Bolts (40 ft/lbs)	X	
Breakaway Femur Bolts (5-6 ft/lbs)	X	
Knee Joint Function and Range of Motion	X	
Leg Skin Condition and Position	X	
Ankle Range of Motion	X	
Foot Condition	X	
<b>OTHER:</b>		
Cleanliness	X	
Target Position	X	
Clothes Pink	X	
Shoes	X	
Knee & Ankle One G Joint Adjustments	X	

Inspection Completed By: I. Clarridge Date: 03/14/03



Transportation Research Center Inc.

SID Post-Use Inspection

Type: III SID S/N: 0328 Mfr: Vector Test Date: 03/17/03  
Proj./Seg. No.: 20020455-1100 Test Eng.: Ginny Watters

ITEM	POST-USE
<b>HEAD:</b>	
Head Skin Condition	X
Head Ballast Condition	X
<b>NECK:</b>	
Rubber Condition and Separation From End Caps	X
<b>THORAX:</b>	
Jacket Condition	X
Arm Foam Condition	X
Damper and Chest Pot Movement and Condition	X
Rib Cage Spring and Support Assembly Condition	X
Rib Wrap Condition	X
Abdomen condition	*
Thorax/Lumbar Spine Bolts	X
Lumbar Spine Condition and Separation From End Caps	X
<b>PELVIS:</b>	
Iliac Crest bone	X
Flesh Condition	X
Hip Range of Motion	X
<b>LEGS AND FEET:</b>	
Knee Skins and Castings Condition	X
Leg Skin Condition	X
Foot Condition	X
Knee Joint Range of Motion	X
Ankle Range of Motion	X

NOTES: Put a patch on bottom abdomen seam. No other damage to report.Inspection Completed By: J. ClarridgeDate: 03/19/03

Transportation Research Center Inc.

SID Post-Use Inspection

Type: HIII SID S/N: 065 Mfr: Denton Test Date: 03/17/03  
 Proj./Seg. No.: 20020455-1100 Test Eng.: Ginny Watters

ITEM	POST-USE
<b>HEAD:</b>	
Head Skin Condition	X
Head Ballast Condition	X
<b>NECK:</b>	
Rubber Condition and Separation From End Caps	X
<b>THORAX:</b>	
Jacket Condition	X
Arm Foam Condition	X
Damper and Chest Pot Movement and Condition	X
Rib Cage Spring and Support Assembly Condition	X
Rib Wrap Condition	X
Abdomen condition	X
Thorax/Lumbar Spine Bolts	X
Lumbar Spine Condition and Separation From End Caps	X
<b>PELVIS:</b>	
Iliac Crest bone	X
Flesh Condition	X
Hip Range of Motion	X
<b>LEGS AND FEET:</b>	
Knee Skins and Castings Condition	X
Leg Skin Condition	X
Foot Condition	X
Knee Joint Range of Motion	X
Ankle Range of Motion	X

NOTES: No damage found.

Inspection Completed By: J. Claridge

Date: 03/19/03

## Appendix D

### Test Equipment List and Calibration Information

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+X: Forward  
+Y: Rightward  
+Z: Downward

+Chest longitudinal deflection:	Outward
+Chest lateral deflection:	Rightward
+Seat belt displacement:	Outward
+Seat belt extension:	Elongation
+Knee slider displacement:	Distance between femur and tibia increased (in relation to a seated dummy)

÷About the X-axis:	Left foot-eversion
	Right foot-inversion
+About the Y-axis:	Left/right foot-dorsiflexion
+About the Z-axis:	Left foot-internal
	Right foot-external

- +Femur force: Tension
- +Seat belt force: Tension
- +Barrier force: Tension

- +X force: Head pushed rearward
- +Y force: Head pushed leftward
- +Z force: Head pulled upward (tension on neck)
- +X moment: Left ear rotating toward left shoulder
- +Y moment: Chin rotating toward chest
- +Z moment: Chin rotating toward left shoulder

+X force:	Ankle forward, knee rearward
+Y force:	Ankle rightward, knee leftward
+Z force:	Tension
+X moment:	Bottom of tibia moving leftward
+Y moment:	Bottom of tibia moving rearward

Sign Convention, Cont'd.  
SAE J211 MAR95

Lumbar load cells:

+X force:	Chest rearward, pelvis forward
+Y force:	Chest leftward, pelvis rightward
+Z force:	Chest upward, pelvis downward
+X moment:	Left shoulder toward left hip
+Y moment:	Sternum toward front of legs
+Z moment:	Right shoulder forward, left shoulder rearward

Frequency Response Classes  
SAE J211 MAR95

<u>Typical Test Measurements</u>	<u>Channel Class</u>
Vehicle Structural Accelerations for use in:	
Total vehicle comparison	60
Collision simulation input	60
Component analysis	600
Integration for velocity or displacement	180
Barrier Face Forces	60
Belt Restraint System Loads	60
Anthropomorphic Test Device	
Head accelerations (linear and angular)	1000
Neck	
Forces	1000
Moments	600
Thorax	
Spine accelerations	180
Rib accelerations	1000
Sternum accelerations	1000
Deflections	600
Lumbar	
Forces	1000
Moments	1000
Pelvis	
Accelerations	1000
Forces	1000
Moments	1000
Femur/Knee/Tibia/Ankle	
Forces	600
Moments	600
Displacements	180
Sled Accelerations	60
Steering Column Loads	600
Head form Accelerations	1000

The direction column on the following sheets describes the transducer output as mounted and wired in the test location. The polarity column indicates whether a polarity change occurred during data acquisition to conform to J211 MAR95. See Report Sign Convention sheet for description of data output as presented in the report: occasionally channels have been adjusted in post-acquisition processing to conform to J211 MAR95.

# Channel Report

3/26/2003 9:41:38 AM

Name of Test 030317-2

Name of DAU DAU6

System MINIDAU

Chan.#	Sensor #	Mnemonic	Description	Dlr.	Range	Unit	Pot.	Cal.	Group	Mfg.	Model	
6001	EVENT	SYNC6	SYNC6		5.12	V	+	10/15/2002	OK	-1	TRC	Event
6002	P23186	BCGXG1	MDB CG X	FWD	595.52888	g	+	3/3/2003	OK	-1	Endevco	7264C-2K-2-180
6003	P23188	BCGYG1	MDB CG Y	RT	599.46142	g	+	3/3/2003	OK	-1	Endevco	7264C-2K-2-180
6004	P22808	BCGZG1	MDB CG Z	UP	603.20452	g	-	3/3/2003	OK	-1	Endevco	7264C-2K-2-180
6005	P24561	LRRXG1	MDB LT RR X	RR	596.73659	g	-	11/22/2002	OK	-1	Endevco	7264C-2K-2-180
6006	P25260	LRRYG1	MDB LT RR Y	RT	598.65536	g	+	11/21/2002	OK	-1	Endevco	7264C-2K-2-180



# Channel Report

3/26/2003 9:41:38 A\*

Name of Test 030317-2

Name of DAU DAU7

System MINIDAU

Chan.#	Seasor #	Mnemonic	Description	Dir.	Range	Pol. Cal.	Group	Mfg.	Model
7001	P25307	HEDXG1	Head Accel X	Rwd	809.10240	-	028ntr	Endevco	7264C-2K-2-18
7002	P25326	HEDYG1	Head Accel Y	Lft	808.84676	-	028ntr	Endevco	7264C-2K-2-18
7003	P25298	HEDZG1	Head Accel Z	Up	807.64741	-	028ntr	Endevco	7264C-2K-2-18
7004	P25318	HEDXR1	Head Accel X Red	Rwd	810.61397	-	028ntr	Endevco	7264C-2K-2-18
7005	P25301	HEDYR1	Head Accel Y Red	Lt	802.80983	-	028ntr	Endevco	7264C-2K-2-18
7006	P25305	HEDZR1	Head Accel Z Red	Up	807.23993	-	028ntr	Endevco	7264C-2K-2-18
7007	1716A-1532-FX	NEKXF1	Neck Force X	Hd	8897.6474	-	028ntr	Denton	1716A
7008	1716A-1532-FY	NEKYF1	Neck Force Y	Hd	8895.2129	+	028ntr	Denton	1716A
7009	1716A-1532-FZ	NEKZF1	Neck Force Z	Hd	13348.030	+	028ntr	Denton	1716A
7010	1716A-1532-MX	NEKXM1	Neck Moment X	Rt Ear	282.53421	-	028ntr	Denton	1716A
7011	1716A-1532-MY	NEKYM1	Neck Moment Y	Chn	282.61056	+	028ntr	Denton	1716A
7012	1716A-1532-MZ	NEKZM1	Neck Moment Z	Chn	281.87299	+	028ntr	Denton	1716A
7013	P25231	LURYG1	Left Upper Rib Y	Rgt	806.24842	+	028ntr	Endevco	7264C-2K-2-18
7014	P25371	LURYR1	Left Upper Rib Red Y	Rgt	791.95668	+	028ntr	Endevco	7264C-2K-2-18
7015	P25075	L.LRYG1	Left Lower Rib Y	Rgt	801.25195	+	028ntr	Endevco	7264C-2K-2-18
7016	P25076	LLRYR1	Left Lower Rib Red Y	Rgt	797.43326	+	028ntr	Endevco	7264C-2K-2-18
7017	P25261	T12YG1	Lower Spine Y	Lft	401.56862	-	028ntr	Endevco	7264C-2K-2-18
7018	P25374	T12YR1	Lower Spine Red Y	Lft	396.97923	-	028ntr	Endevco	7264C-2K-2-18
7019	P25063	PEVYG1	Pelvis Accel Y	Lft	400.40353	-	028ntr	Endevco	7264C-2K-2-18
7020	P25074	PEVYR1	Pelvis Accel Red Y	Lft	397.60196	-	028ntr	Endevco	7264C-2K-2-18
7021	J27271	HEDXG4	Head Accel X	Rwd	800.50031	-	065ntr	Endevco	7264-2000T2
7022	J27352	HEDYG4	Head Accel Y	Lft	793.42941	-	065ntr	Endevco	7264-2000T2
7023	J27283	HEDZG4	Head Accel Z	Up	809.34541	-	065ntr	Endevco	7264-2000T2
7024	J29134	HEDXR4	Head Accel X Red	Rwd	793.89691	-	065ntr	Endevco	7264-2000T2
7025	J29020	HEDYR4	Head Accel Y Red	Lt	802.35692	-	065ntr	Endevco	7264-2000T2
7026	J27322	HEDZR2	Head Accel Z Red	Up	814.06811	-	065ntr	Endevco	7264-2000T2
7027	1716-0627-FX	NEKXF4	Neck Force X	Hd	8900.5691	-	065ntr	Denton	1716
7028	1716-0627-FY	NEKYF4	Neck Force Y	Hd	8904.8460	+	065ntr	Denton	1716
7029	1716-0627-FZ	NEKZF4	Neck Force Z	Hd	13331.510	+	065ntr	Denton	1716
7030	1716-0627-MX	NEKXM4	Neck Moment X	Rt Ear	282.90624	-	065ntr	Denton	1716
7031	1716-0627-MY	NEKYM4	Neck Moment Y	Chn	282.62862	+	065ntr	Denton	1716
7032	1716-0627-MZ	NEKZM4	Neck Moment Z	Chn	282.46679	+	065ntr	Denton	1716

# Channel Report

3/26/2003 9:41:38 AM

Name of Test 030317-2

Name of DAU DAU8

System MINIDAU

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol. Cal	Group	Mfg.	Model
8001	P25068	LURYG4	Left Upper Rib Y	Rgt	804.05798	+	065nlr	Endevco	7264C-2K-2-18
8002	P25067	LURYR4	Left Upper Rib Red Y	Rgt	808.88509	+	065nlr	Endevco	7264C-2K-2-18
8003	P25389	LLRYG4	Left Lower Rib Y	Rgt	799.52528	+	065nlr	Endevco	7264C-2K-2-18
8004	P25395	LLRYR4	Left Lower Rib Red Y	Rgt	788.95463	+	065nlr	Endevco	7264C-2K-2-18
8005	P14826	T12YG4	Lower Spine Y	Lft	401.80813	-	065nlr	Endevco	7264C-2K-2-18
8006	P25069	T12YR4	Lower Spine Red Y	Lft	398.15851	-	065nlr	Endevco	7264C-2K-2-18
8007	P25397	PEVYG4	Pelvis Accel Y	Lft	400.34404	-	065nlr	Endevco	7264C-2K-2-18
8008	P25061	PEVYR4	Pelvis Accel Red Y	Lft	401.07161	-	065nlr	Endevco	7264C-2K-2-18
8009	P23545	RFSXG1	RGT SIDE SILL FRNT ST X	FWD	398.94031	+	---	Endevco	7264-2000TZ
8010	J37150	RFSYG1	RGT SIDE SILL FRNT ST Y	LT	983.21619	-	OK -1	Endevco	7264-2000TZ
8011	J34877	RFSZG1	RGT SIDE SILL FRNT ST Z	UP	399.32613	-	OK -1	Endevco	7264-2000TZ
8012	J40415	RRSXG1	RGT SIDE SILL RR ST X	FWD	395.44924	+	OK -1	Endevco	7264-2000TZ
8013	P23519	RRSYG1	RGT SIDE SILL RR ST Y	LT	991.78676	-	OK -1	Endevco	7264C-2K-2-18
8014	J34086	RRSZG1	RGT SIDE SILL RR ST Z	UP	398.35987	-	OK -1	Endevco	7264-2000TZ
8015	J33397	RDKXG1	RR FLR PAN ABV AXLE X	FWD	978.76163	+	OK -1	Endevco	7264-2000TZ
8016	J33310	RDKYG1	RR FLR PAN ABV AXLE Y	RT	1014.6650	+	OK -1	Endevco	7264C-2K-2-18
8017	P24434	RDKZG1	RR FLR PAN ABV AXLE Z	UP	1015.8730	-	OK -1	Endevco	7264C-2K-2-18
8018	P25317	LRSYG1	LFT SIDE SILL RR ST Y	RT	1018.2165	+	OK -1	Endevco	7264-2000TZ
8019	J34118	LFSYG1	LFT SIDE SILL FRNT ST Y	RT	999.62904	+	OK -1	Endevco	7264C-2K-2-18
8020	P23373	LFCYG1	LFT SIDE SILL DOOR CTRLN Y	RT	1464.3214	+	OK -1	Endevco	7264C-2K-2-18
8021	P25323	RRTYG1	RGT RR OCP COMP Y	RT	1463.7353	+	OK -1	Endevco	7264C-2K-2-18
8022	P23384	LFMYG1	LFT FRNT DOOR MIDRR Y	RT	1513.4048	+	OK -1	Endevco	7264C-2K-2-18
8023	P25516	LFUYG1	LFT FRNT DOOR UPPER C/L	RT	1534.7721	+	OK -1	Endevco	7264C-2K-2-18
8024	P24596	LRMYG1	LFT RR DOOR MIDREAR Y	RT	1481.4814	+	OK -1	Endevco	7264C-2K-2-18
8025	J34122	LRUYG1	LFT RR DOOR UPPER CL Y	RT	1472.5337	+	OK -1	Endevco	7264-2000TZ
8026	J12298	LLBYG1	LFT LOWER B-POST Y	RT	1481.4814	+	OK -1	Endevco	7264-2000TZ
8027	P25329	LLBYG1	LFT MID B-POST Y	RT	1493.9309	+	OK -1	Endevco	7264C-2K-2-18
8028	P24580	LLAYG1	LFT LOWER A-POST Y	LT	1493.9309	-	OK -1	Endevco	7264C-2K-2-18
8029	P23809	LUAYG1	LFT MID A-POST Y	LT	1483.7999	-	OK -1	Endevco	7264C-2K-2-18
8030	J35806	LFTYG1	LFT FRNT ST TRK Y	LT	1451.8644	-	OK -1	Endevco	7264-2000TZ
8031	P23333	LRTYG1	LFT RR ST TR Y	LT	1476.1849	-	OK -1	Endevco	7264C-2K-2-18
8032	P21854	VCGXG1	VEH C/G X	FWD	981.55745	+	OK -1	Endevco	7264C-2K-2-18

# Channel Report

3/26/2003 9:41:39 A

Name of Test 030317-2

Name of DAU DAU9

System MINIDAU

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model
9001	J35750	VCGYGI	VEH C/G Y	RT	1019.8390 g	+	3/13/2003	OK -1	Endevco	7264-2000TZ
9002	P23292	VCGZGI	VEH C/G Z	UP	1000.9775 g	-	3/25/2003	OK -1	Endevco	7264C-2K-2-15C

# Digital and System Channel Report

Name of Test	030317-2	System	MINIDAU	Name of DAU	DAU6	description
enable Channel		Type		Data File		Module Type
Yes 6501	DIG6	dig0		DAT66501		KM3710 Controller

### description

**long**

short

bit position bit

MD8 RT SIDE CONTACT SWITCH  
MD8 LT SIDE CONTACT SWITCH

MIDAR1  
MDAL1

MSB = bit 15 1

bit 14 1

13 0

0 0

hit 11 0  
hit 10 0

hit no 0 0 0

bit 08 bit 09

0710

bit 06 0

0 50 100

bit 04	0	0
bit 03	0	0

Bit 02	Bit 03	0	0
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bit 01 0

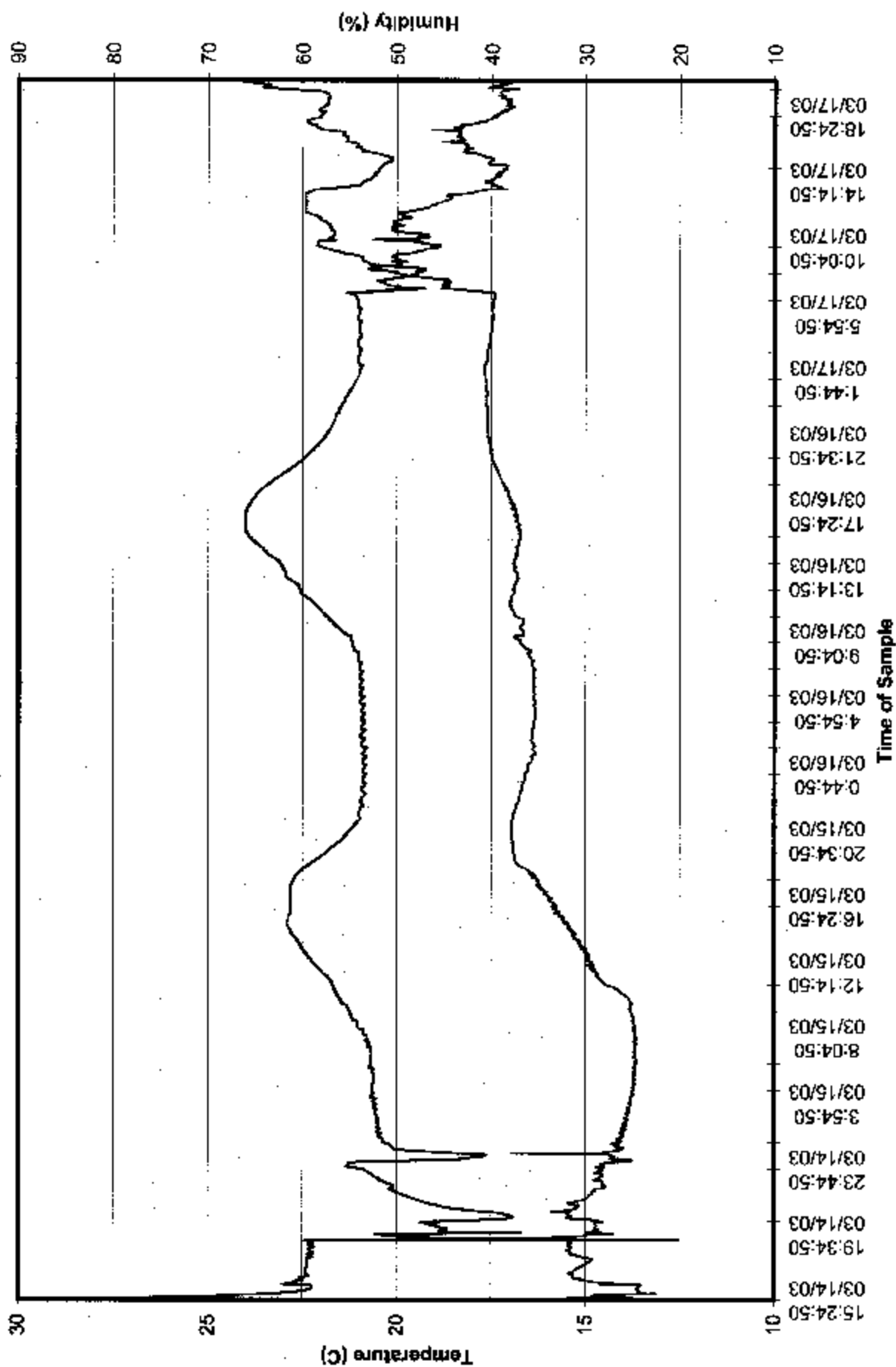
bit 00 0



Dummy	065nhr	Type	SID	Description	Name	Model	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	TRC Dir
HEDXG	Head Accel X				J27271	7264-2000TZ	Endevco	0.03198 g	2000	08/11/2003	Rwd
HEDYG	Head Accel Y				J27352	7264-2000TZ	Endevco	0.0239 g	2000	08/11/2003	Lft
HBDZG	Head Accel Z				J27283	7264-2000TZ	Endevco	0.02343 g	2000	08/11/2003	Up
HEDXR	Head Accel X Red				J29134	7264-2000TZ	Endevco	0.02804 g	2000	08/11/2003	Rwd
HEDYR	Head Accel Y Red				J29020	7264-2000TZ	Endevco	0.02279 g	2000	08/11/2003	Lt
HEDZR	Head Accel Z Red				J27322	7264-2000TZ	Endevco	0.02419 g	2000	08/11/2003	Up
NEKXP	Neck Force X				1716-0627-FX	1716	Denton	0.000191111 N	8896.4	08/10/2003	Hd Rd,Cat Rr
NEKYF	Neck Force Y				1716-0627-FY	1716	Denton	0.000188514 N	8896.4	08/10/2003	Hd Lt,Cat Rl
NEKZF	Neck Force Z				1716-0627-FZ	1716	Denton	0.000085345 N	13344.6	08/10/2003	Hd Up,Cat Dn
NEKXM	Neck Moment X				1716-0627-MX	1716	Denton	0.005914336 N-m	282.5	08/10/2003	Rt Ear to Rt Shld
NEKYM	Neck Moment Y				1716-0627-MY	1716	Denton	0.005978761 N-m	282.5	08/10/2003	Chn to Strmm
NEKZM	Neck Moment Z				1716-0627-MZ	1716	Denton	0.00831469 N-m	282.5	08/10/2003	Chn to Lt Shld
LURYG	Left Upper Rib Y				7264C-2K-2-18 P25068	7264C-2K-2-18	Endevco	0.01721 g	2000	12/19/2002	Rgt
LURYR	Left Upper Rib Red Y				7264C-2K-2-18 P25067	7264C-2K-2-18	Endevco	0.01623 g	2000	12/19/2002	Rgt
LLRYG	Left Lower Rib Y				7264C-2K-2-18 P25389	7264C-2K-2-18	Endevco	0.01642 g	2000	12/19/2002	Rgt
LLRYR	Left Lower Rib Red Y				7264C-2K-2-18 P25395	7264C-2K-2-18	Endevco	0.02028 g	2000	12/19/2002	Rgt
T12YG	Lower Spine Y				7264C-2K-2-18 P14826	7264C-2K-2-18	Endevco	0.01991 g	2000	12/19/2002	Lt
T12YR	Lower Spine Red Y				7264C-2K-2-18 P25069	7264C-2K-2-18	Endevco	0.01692 g	2000	12/19/2002	Lt
PEVYG	Pelvis Accel Y				7264C-2K-2-18 P25397	7264C-2K-2-18	Endevco	0.01827 g	2000	12/19/2002	Lt
PEVYR	Pelvis Accel Red Y				7264C-2K-2-18 P25061	7264C-2K-2-18	Endevco	0.01798 g	2000	12/19/2002	Lt

# 55/28 KPH 90 DEGREE SIDE IMPACT MDB INTO LEFT SIDE OF 2003 MAZDA 6

030317-2



**SIDE IMPACTOR BARRIER CERTIFICATION**

Date: July 11, 2002

To: Transportation Research  
Ship & Rec Bldg 50  
10820 St. Route 347  
East Liberty, OH 43319-0367

**PURCHASE ORDER INFORMATION**

Customer P.O. Number: 018767  
Work Order Number: 13552  
Quantity: 05 pieces

**CORE INFORMATION**

Core Type: PAMG-3/8-1.6-001-P-5052-T  
Measured Cell Size: 0.375 inches  
Measured Density: 1.6 pcf

Unit Numbers: 050C0602 - 01 pc.  
050A0602 - 01 pc.  
049A0602 - 01 pc.  
048C0602 - 01 pc.  
035C0602 - 01 pc.

This is to certify that the aluminum honeycomb core supplied, under the unit numbers provided, meets the crush requirements of 45 psi +/- 2.5 psi as per DWG# DSL-1285.

  
Quality Control Representative  
Karl D. Zwaanstra







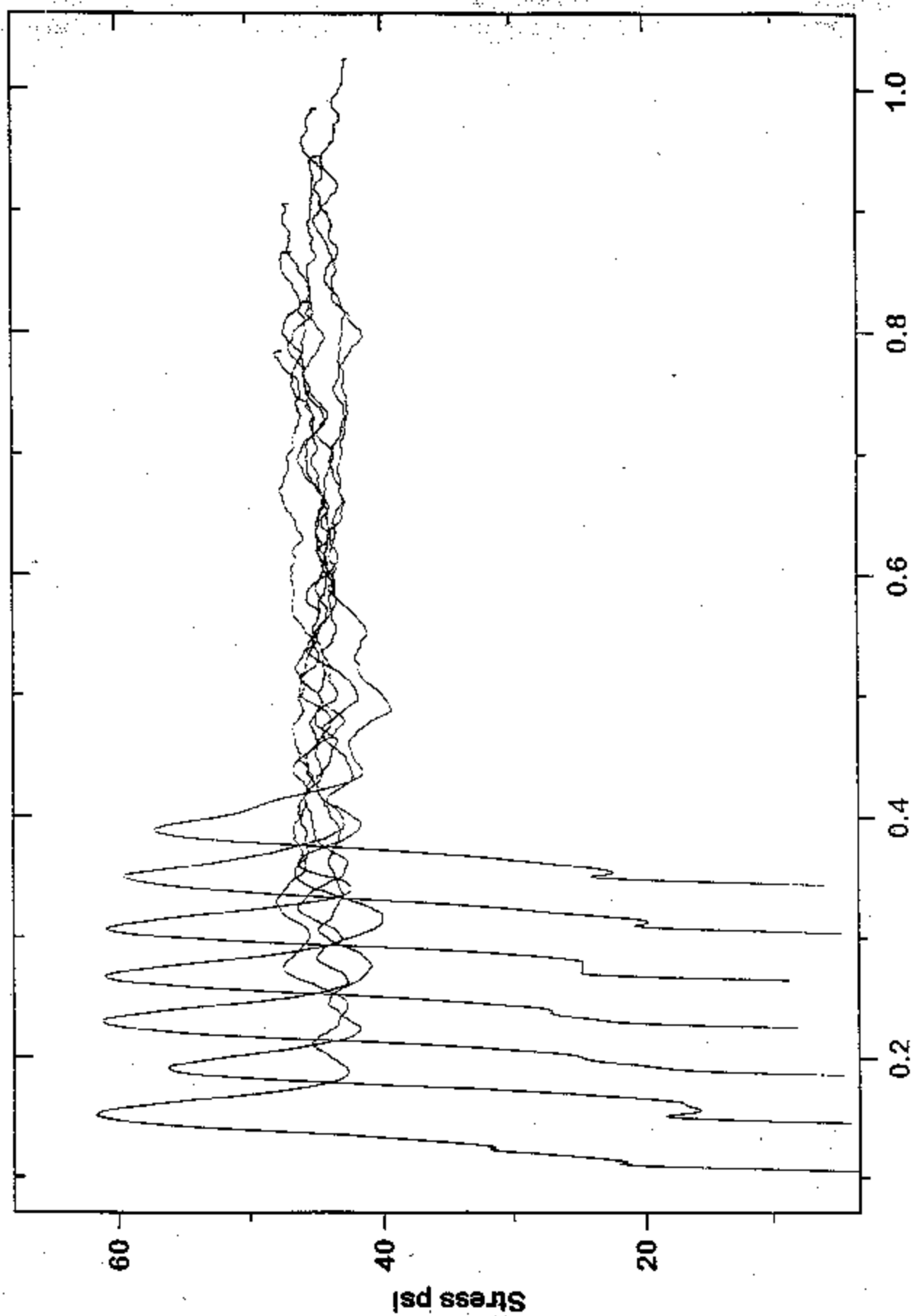
Crush Data

45 psi +/- 2.5 psi per DWG # DSL-1285

**Block Number:** 049A0602

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	46.16	46.20	46.90
2	45.19	44.51	45.39
3	45.18	44.59	45.82
4	44.12	45.03	46.00
5	44.61	44.57	45.10
6	43.71	42.95	43.74
7	43.36	43.10	44.13

BLOCK # 049A0602 Sample ID: IN224645





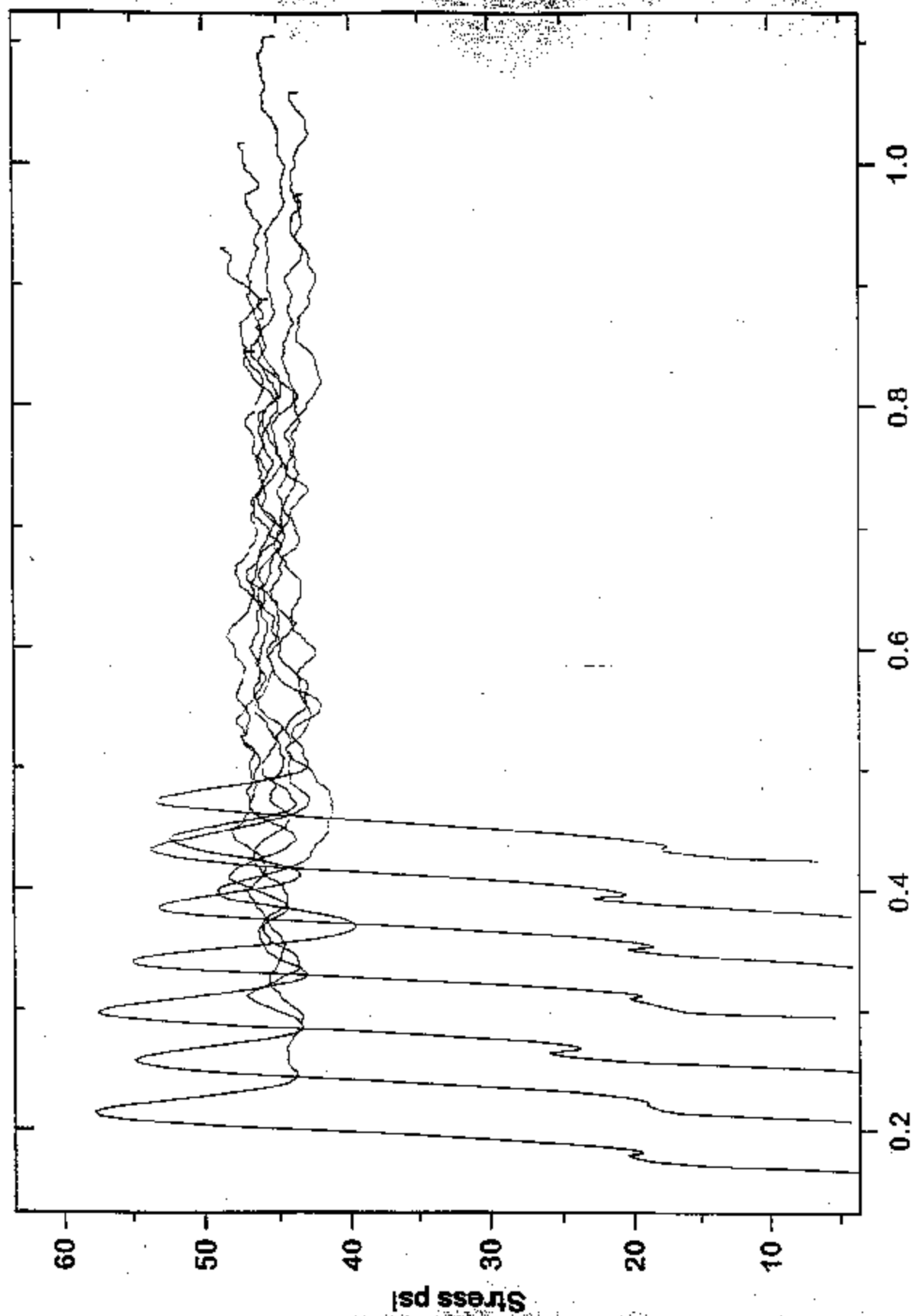
## Crush Data

45 psi +/- 2.5 psi per DWG # DSL-1285

**Block Number:** 048C0602

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	47.11	47.40	46.45
2	45.53	45.74	45.30
3	46.53	46.08	46.11
4	43.56	44.04	42.94
5	45.83	45.92	46.60
6	45.02	44.18	43.70
7	44.58	45.48	44.82

BLOCK # 048C0602 Sample ID: IN224702



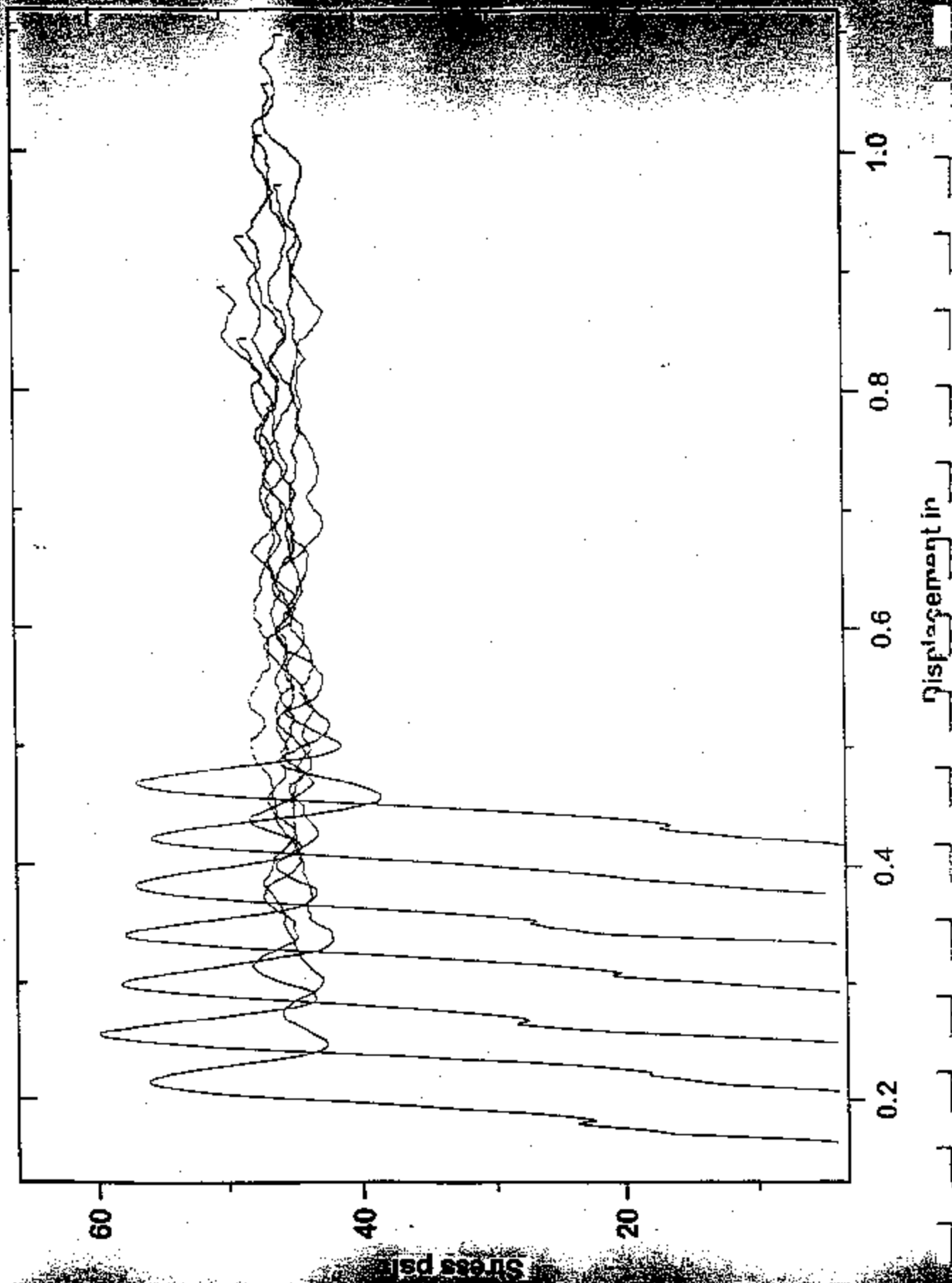
Crush Data

45 psi +/- 2.5 psi per DWG # DSL-1285

**Block Number: 050C0602**

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	45.68	45.06	46.48
2	47.32	46.96	47.22
3	45.64	46.03	45.94
4	44.46	44.58	44.57
5	46.31	46.61	47.40
6	43.73	44.01	44.57
7	45.34	45.64	46.59

BLOCK # 050C0602 Sample ID: IN224700





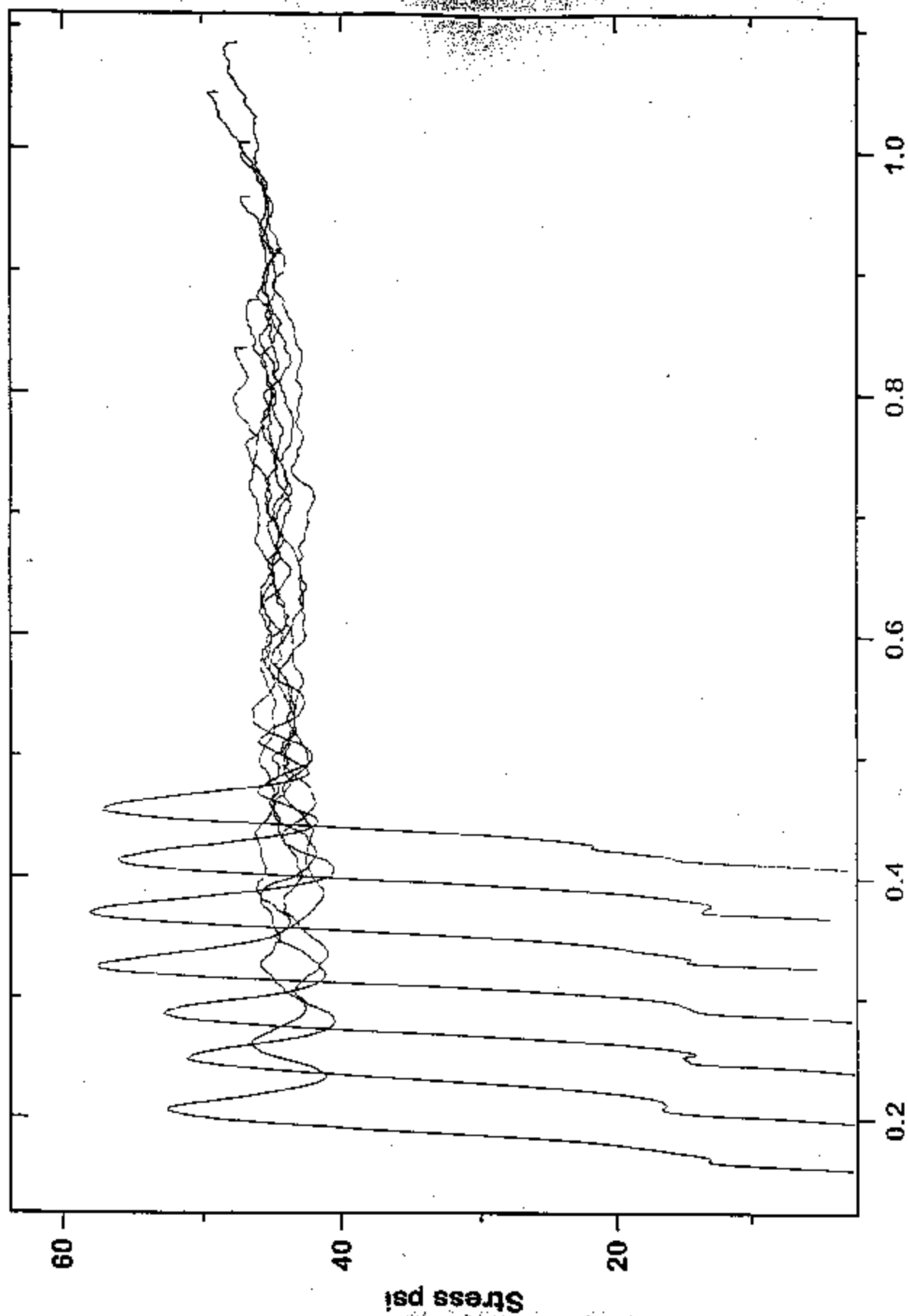
Crush Data

45 psi +/- 2.5 psi per DWG # DSL-1285

**Block Number:** 050A0602

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	45.45	45.57	46.30
2	43.96	44.38	44.78
3	43.82	42.82	43.14
4	44.82	45.12	45.41
5	43.48	44.31	45.21
6	44.66	45.38	45.21
7	45.66	45.02	45.87

BLOCK # 050A0602 Sample ID: IN224649







PLASCORE

**SIDE IMPACTOR BARRIER CERTIFICATION**

Date: July 11, 2002

To: Transportation Research  
Ship & Rec Bldg 50  
10820 St. Route 347  
East Liberty, OH 43319-0367

**PURCHASE ORDER INFORMATION**

Customer P.O. Number: 018767  
Work Order Number: 13552  
Quantity: 05 pieces

**CORE INFORMATION**

Core Type: PCGA-1/4-5.2-P-3003-T  
Measured Cell Size: 0.250 inches  
Measured Density: 5.2 pcf

Unit Numbers: 035A0602 - 03 pcs.  
058B0502 - 02 pcs.

This is to certify that the aluminum honeycomb core supplied, under the unit numbers provided, meets the crush requirements of 232 - 250 psi as per DWG# DSL-1285.

  
Quality Control Representative  
Karl D. Zwaanstra



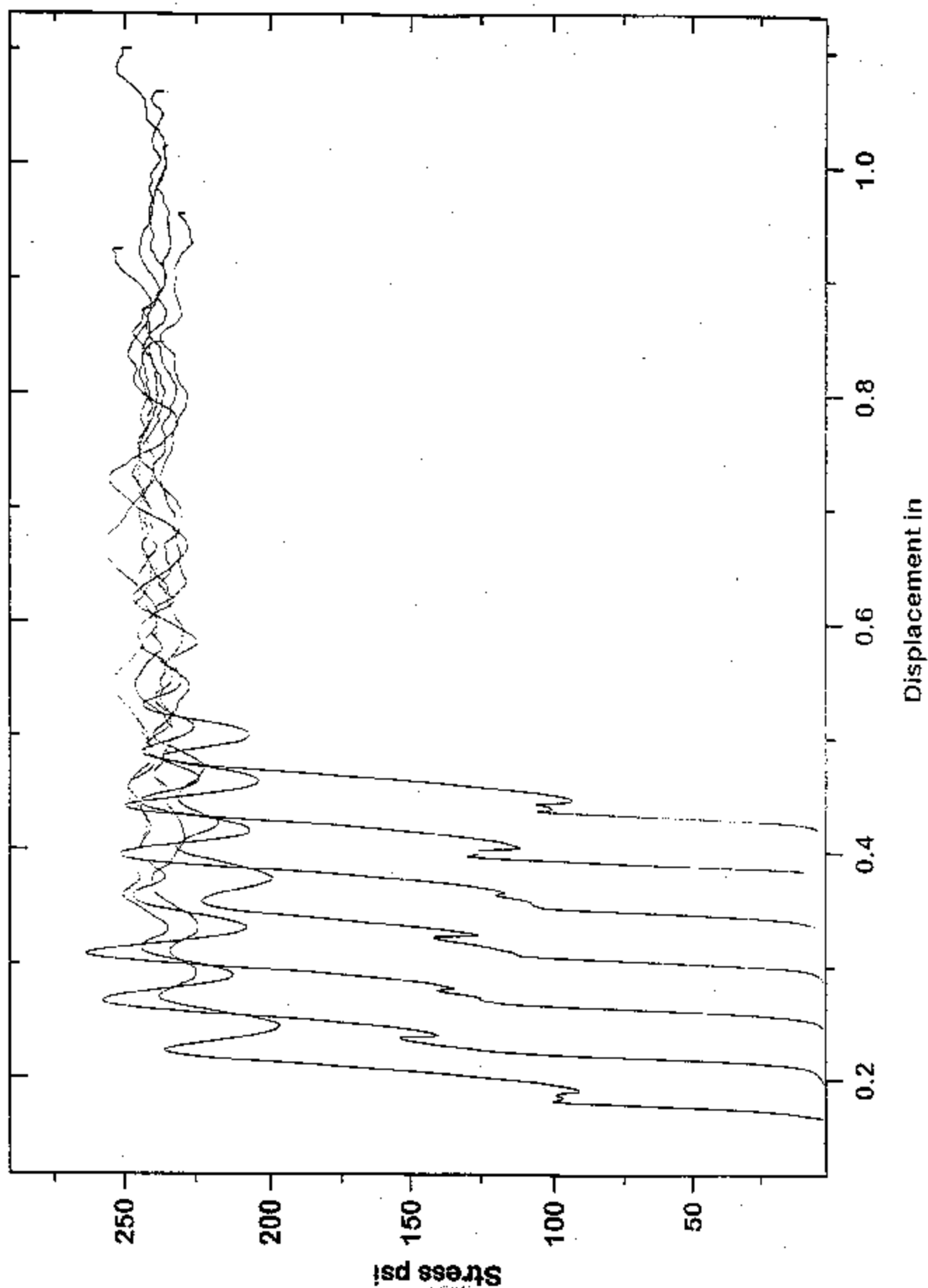


Crush Data  
232 - 250 psi per DWG # DSL-1285

**Block Number: 058B0502**

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	234.88	233.03	238.26
2	245.89	246.74	234.83
3	244.45	242.80	244.84
4	233.66	232.58	232.66
5	241.14	241.30	238.97
6	241.47	241.27	241.95
7	241.53	238.17	235.74

BLOCK # 058B0502 Sample ID: IN224430



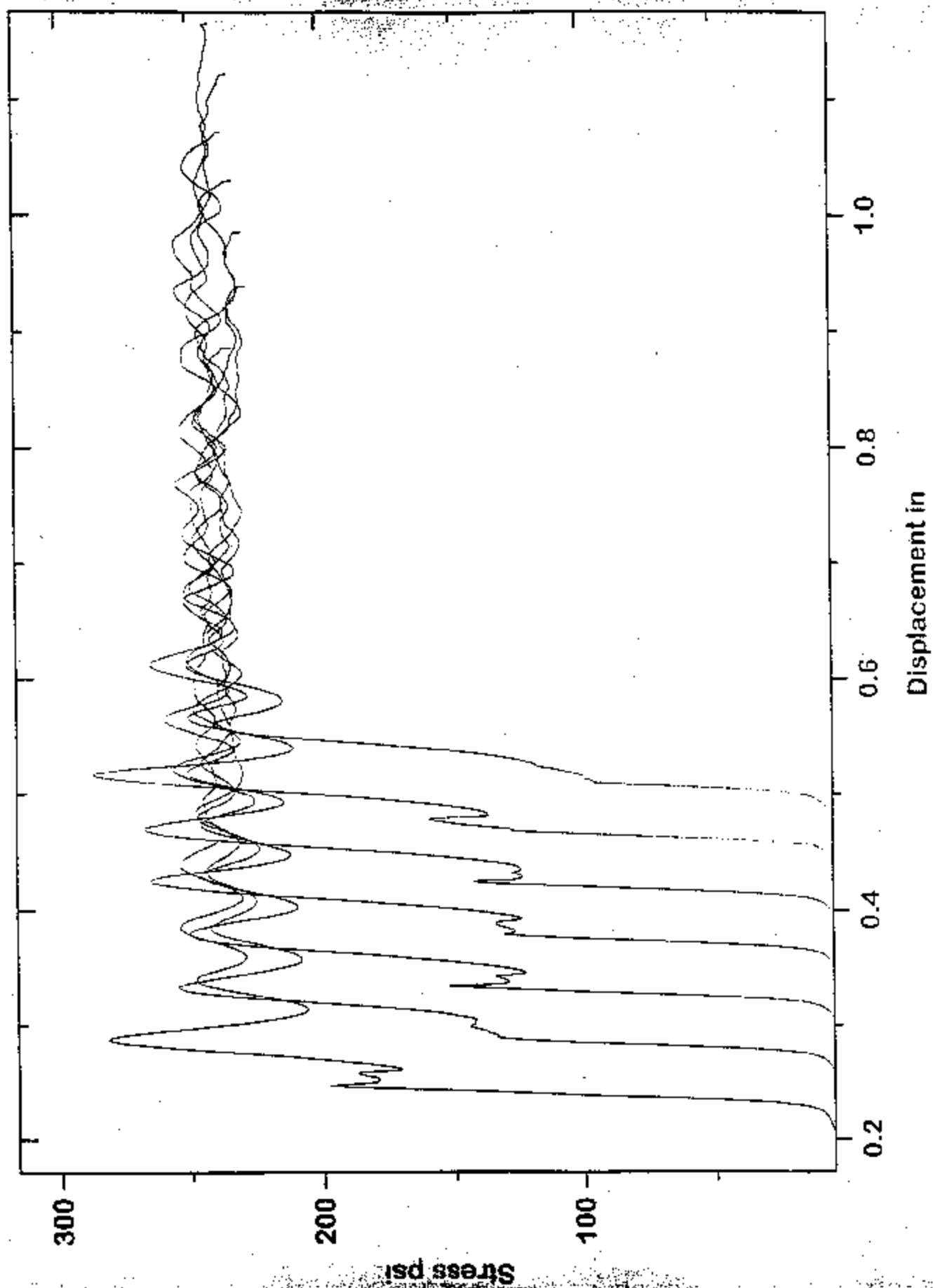


Crush Data  
232 - 250 psi per DWG # DSL-1285

Block Number: 035A0602

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	244.40	243.67	243.31
2	233.87	235.01	232.86
3	236.81	234.93	233.33
4	239.66	238.82	236.92
5	244.52	242.91	243.54
6	246.13	246.27	243.76
7	244.63	245.45	243.59

BLOCK # 035A0602 Samples: IN224610



Stress psi

Displacement in

Crush Data  
45 psi +/- 2.5 psi per DWG # DSL-1285

**Block Number:** 035C0602

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	46.57	46.17	46.74
2	45.67	45.64	47.19
3	45.73	45.27	45.40
4	44.47	44.96	45.89
5	46.95	47.06	46.69
6	45.56	47.05	47.20
7	45.38	45.66	45.78

BLOCK # 035C0602 Sample ID: IN224647

